

# **EXHIBIT 5**

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# UTILITY PATENT APPLICATION TRANSMITTAL

Attorney Docket No.		005288 00014
First Inventor		Senthil Sengodan
Title	METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS NETWORKS THAT FACILITATES END-TO-END SECURITY	
Express Mail Label No.		

(Only for new nonprovisional applications under 37 C.F.R. 1.53(b))

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)  
(Submit an original and a duplicate for fee processing)
2. ☐ Applicant claims small entity status.  
See 37 CFR 1.27.
3. ☒ Specification [Total Pages 31]  
(preferred arrangement set forth below)
  - Descriptive title of the invention
  - Cross Reference to Related Applications
  - Statement Regarding Fed sponsored R & D
  - Reference to sequence listing, a table, or a computer program listing appendix
  - Background of the Invention
  - Brief Summary of the Invention
  - Brief Description of the Drawings (if filed)
  - Detailed Description
  - Claim(s)
  - Abstract of the Disclosure
4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 6]
5. Oath or Declaration [Total Pages 2]
  - a. ☒ Newly executed (original or copy)
  - b. ☐ Copy from a prior application (37 CFR 1.63 (d))  
(for a continuation/divisional with Box 18 completed)
  - ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b)
6. ☒ Application Data Sheet. See 37 CFR 1.76

## ADDRESS TO:

Assistant Commissioner for Patents  
 Box Patent Application  
 Washington, DC 20231

## ACCOMPANYING APPLICATIONS PARTS

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
  - a. ☐ Computer Readable Form (CRF)
  - b. Specification Sequence Listing on:
    - i. ☐ CD-ROM or CD-R (2 copies); or
    - ii. ☐ paper
  - c. ☐ Statements verifying identity of above copies
9. ☒ Assignment Papers (cover sheet & document(s))
10. ☐ 37 C.F.R. §3.73(b) Statement ☐ Power of Attorney  
(when there is an assignee)
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☐ Other: \_\_\_\_\_

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

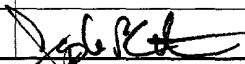
☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: \_\_\_\_\_ / \_\_\_\_\_  
 Prior application information: Examiner \_\_\_\_\_ Group / Art Unit \_\_\_\_\_

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 17. CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Label 22907 or ☐ Correspondence address below  
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12/18/01 J1131 U.S. PTO

10/10/21 10/18/01

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**FEE TRANSMITTAL  
for FY 2002**

Patent fees are subject to annual revision

**Complete if Known**

Application Number	TO BE ASSIGNED
Filing Date	December 18, 2001
First Named Inventor	Senthil Sengodan
Examiner Name	TO BE ASSIGNED
Group / Art Unit	TO BE ASSIGNED
Attorney Docket No.	005288.00014

**TOTAL AMOUNT OF PAYMENT** (\$) 1440**METHOD OF PAYMENT (check one)**1. ☒ The Commissioner is hereby authorized to charge indicated fees and credit any over payments toDeposit  
Account  
Number

19-0733

Deposit  
Account  
Name

BANNER &amp; WITCOFF, LTD

☒ Charge Any Additional Fee Required  
Under 37 CFR 1.16 and 1.17  
☐ Applicant claims small entity status  
See 37 CFR 1.27
2. ☐ Payment Enclosed
☐ Check ☐ Credit card ☐ Money Order ☐ Other
**FEE CALCULATION****1. BASIC FILING FEE**

Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description	Fee Paid
101	740	201	370	Utility filing fee	740
106	330	206	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	
114	160	214	80	Provisional filing fee	

**SUBTOTAL (1)**

(\$ 740)

**2. EXTRA CLAIM FEES**

Total Claims	Extra Claims	Fee from below	Fee Paid
38	-20 **	18	324
7	-3 **	4	336
Multiple Dependent			0

Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description
103	18	203	9	Claims in excess of 20
102	84	202	42	Independent claims in excess of 3
104	280	204	140	Multiple dependent claim, if not paid
109	84	209	42	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

**SUBTOTAL (2)**

(\$ 660)

\*\*or number previously paid, if greater, For Reissues, see above

**FEE CALCULATION (continued)**

Fee Code	Large Entity Fee (\$)	Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	920	217	460	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	
121	280	221	140	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,280	241	640	Petition to revive - unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	460	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17 (q)	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	40
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	

Other fee (specify) \_\_\_\_\_

\*Reduced by Basic Filing Fee Paid

**SUBTOTAL (3)**

(\$ 40)

**SUBMITTED BY****Complete (if applicable)**

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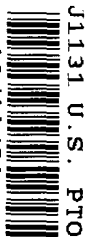
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12/18/01



## **Application Data Sheet**

### **Application Information**

Application number::

Filing Date::

Application Type:: Regular

Subject Matter:: Utility

Suggested classification::

Suggested Group Art Unit::

CD-ROM or CD-R?: None

Number of CD disks::

Number of copies of CDs::

Sequence submission?:

Computer Readable Form (CRF)?:

Number of copies of CRF::

Title:: METHOD AND APPARATUS FOR ADDRESS  
ALLOCATION IN GPRS NETWORKS THAT  
FACILITATES END-TO-END SECURITY

Attorney Docket Number:: 005288.00014

Request for Early Publication?: NO

Request for Non-Publication?: NO

Suggested Drawing Figure::

Total Drawing Sheets:: 6

Small Entity?: NO

Latin name::

Variety denomination name::

Petition included?: NO

Petition Type::

Licensed US Govt. Agency::

Contract or Grant Numbers::

Secrecy Order in Parent Appl.?: NO

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### **Correspondence Information**

Correspondence Customer Number:: 22907

### **Representative Information**

Representative Customer Number:: 22907

### **Domestic Priority Information**

Application::	Continuity Type::	Parent Application::	Parent Filing Date::
This Application			

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### Foreign Priority Information

Country::	Application number::	Filing Date::	Priority Claimed::

### Assignee Information

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 Country of mailing address:: FINLAND  
 Postal or Zip Code of mailing address::

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**METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS  
NETWORKS THAT FACILITATES END-TO-END SECURITY**

**BACKGROUND OF THE INVENTION**

**Field of the Invention**

- [01] The invention relates to General Packet Radio System (GPRS) and GPRS-based networks. More particularly, the present invention relates to a method and system that assigns a network address to a mobile station in a GPRS network or a GPRS-based network.

**Background of the Invention**

- [02] IPv4 is the version of IP (Internet Protocol) that is currently deployed in enterprise networks, as well as the public Internet. One of the limitations of IPv4 is that it has a limited address space. Consequently, in order to conserve addresses, enterprises and other administrative domains (ADs) have resorted to using private addresses. Private addresses are network addresses in which the IP address falls within the ranges of

[10.0.0.0 - 10.255.255.255],

[172.16.0.0 - 172.31.255.255], or

[192.168.0.0 - 192.168.255.255].

- [03] Private addresses that are assigned by an administrative entity within an administrative domain have relevance only within the administrative domain. Accordingly, such private addresses must not be visible outside the administrative domain. An advantage of using private addresses is that different administrative



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domains may assign the same private IP address to hosts within their respective administrative domains without any concern of conflict. On the other hand, a Network Address Translator (NAT) is used when a host that is assigned a private address within an administrative domain intends to send an IP datagram to a host that is outside the administrative domain of the sending host. A NAT transforms a private IP address (and possibly other selected fields within the datagram) into a public IP address prior to the IP datagram being sent outside the administrative domain associated with the NAT. Similarly, when an IP datagram is sent from a host that is outside the administrative domain associated with the NAT to a host with a private address, then the NAT transforms a public IP address to a private address.

[04] Figure 1 depicts two administrative domains 101 and 102 that are separated by a NAT 103. Domain 101 is a private administrative domain, while domain 102 is a public administrative domain, such as the Internet. Private domain 101 includes a plurality of IP (Internet Protocol) devices 104, 105 and 106 that each provide functionality that includes host and/or client and/or server functionality in a well-known manner. Public domain 102 also includes a plurality of IP devices, of which only IP device 107 is shown. Each IP device of public domain 102 provides functionality that includes host and/or client and/or server functionality in a well-known manner. It should be understood that both domains 101 and 102 could include any number of IP devices that are not shown in Figure 1. As used herein, the term “IP device” is a network device that provides at least host and/or client and/or server functionality in a well-known manner.

[05] To illustrate a conventional NAT-based address assignment operation, consider a situation in which IP device 104 within private domain 101 intends to send a

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datagram to IP device 107 in public domain 102. IP device 104 sends the datagram to IP device 107. NAT 103 intercepts the datagram and translates the address contained in the datagram to a valid address in the public address space. NAT 103 then forwards the datagram containing the translated address to IP device 107. When IP device 107 sends a return (or an initial) datagram to IP device 104, NAT 103 receives the datagram containing a “public” address for IP device 104, translates the address to a corresponding private address in private domain 101, and forwards the datagram to IP device 104.

- [06] Use of private addresses within an administrative domain and use of a NAT at the edge of an administrative domain has been widely adopted and deployed within enterprises. There are, however, two major drawbacks associated with use of a NAT. The first major drawback is that the NAT-based approach breaks the end-to-end security model by changing the destination address of a datagram and thereby invalidating the authentication header of the datagram. The second major drawback is that certain types of applications cannot work in the presence of a NAT, unless remedial measures are taken, such as the inclusion of an application gateway (proxy). For example, when an IP address is embedded into an application protocol data unit (PDU), an ALG (Application Level Gateway) is required so that the embedded IP address is changed because a conventional NAT-based address assignment operation will not change the embedded IP address.

- [07] In order to overcome the disadvantages associated with NATs, i.e., the security break and the “unfriendliness” toward some applications, a mechanism commonly referred to as Realm Specific IP (RSIP) has gained significant support within the Internet Engineering Task Force (IETF).

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[08] According to RSIP, when a host (i.e., an RSIP client) needs an IP address assigned, the host indicates to an RSIP server that is responsible for assigning IP addresses whether the desired IP address is needed for communicating with a IP device within the administrative domain of the requesting host, or is needed for communicating with a host/client outside the administrative domain of the requesting host. Based on the nature of the request, the RSIP server assigns a private IP address or a public IP address to the requesting host.

[09] Figure 2a depicts two administrative domains 201 and 202 that are separated by an RSIP server 203. Domain 201 is a private administrative domain, while domain 202 is a public administrative domain, such as the Internet. Private domain 201 includes a plurality of IP devices, of which only IP device 204 is shown. IP device 204 provides functionality that includes host and/or client and/or server functionality in a well-known manner. Public domain 202 also includes a plurality of IP devices, of which only IP device 205 is shown. Each IP device of public domain 202 provides functionality that includes host and/or client and/or server functionality in a well-known manner. It should be understood that both domains 201 and 202 could include any number of IP devices that are not shown in Figure 2a.

[10] When IP device 204 desires to send a datagram to IP device 205, IP device 204 sends a datagram 206a (Figure 2b) to RSIP server 203 containing an outer IP header 207, an inner IP header 208 and a payload 209. Outer IP header 207 contains the private address (i.e., A.1) for IP device 204 in a source (Src) field, and the private address (i.e., A.5) for RSIP server 203 in a destination (Dst) field. Inner IP header 208 contains the public address (B.2) that the RSIP server assigns device 204 in an src field, and the public address (B.20) for IP device 205 in a Dst field. RSIP server 203

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removes the outer IP header and sends datagram 206b (Figure 2b) to IP device 205 using the public address (B.20) for IP device 205 in a Dst field and the public address (B.2) for IP device 204 in an Src field.

- [11] When IP device 205 sends a datagram to IP device 204, IP device 205 sends a datagram containing the public address (B.20) for IP device 205 in an Src field and the public address (B.2) for IP device 204 in a Dst field. RSIP server 203 encapsulates the received datagram using an outer IP header containing a private address (A.1) for IP device 204 in a Dst field and the private address (A.5) for RSIP server 203 in an Src field.
- [12] Thus, when a private IP address is assigned to a requesting host, the IP datagram does not leave the administrative domain. When an IP datagram leaves an administrative domain, the address that is assigned to the transmitting host is a public IP address. Consequently, the RSIP protocol makes use of a NAT unnecessary, and thereby avoids the drawbacks involving NATs.
- [13] In the case of a General Packet Radio System (GPRS) network or a GPRS-based network (such as a Universal Mobile Telecommunications System (UMTS)), a Mobile Station (MS) is assigned an IP address by a Gateway GPRS Support Node (GGSN). Currently, such an IP address is an IPv4 address. The protocol that is used for address assignment is specific to GPRS networks and is referred to as PDP Context Activation. PDP (Packet Data Protocol) is an acronym that is used within GPRS networks to refer to IP addresses, X.25 addresses, etc. An administrative domain within GPRS networks (and within cellular networks, in general) is referred to as a PLMN (Public Land Mobile Network).

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- [14] Figure 3 shows generic GPRS protocol stacks for a mobile station (MS), base station subsystem (BSS), Serving GPRS Support Node (SGSN) and the Gateway GPRS Support Node (GGSN). The IP address for the MS may be seen on the protocol stack for the MS.
- [15] Figures 4a-4d illustrate a conventional PDP (Packet Data Protocol) context activation sequence within a GPRS network. During the first step of a conventional PDP context activation shown in Figure 4a, an MS sends an Activate PDP Context Request message to an SGSN through a BSS. The Activate PDP Context Request message contains appropriate information in the NSAPI, PDP type, PDP Addr, APN, QoS Req, and PDP Config Options in a well-known manner. In Figure 4b, the SGSN sends a Create PDP Context Request message to a GGSN containing appropriate information in the PDP Type, PDP Addr, APN, QoS Negotiated, TID, Selection Mode, PDP Config Options fields. In Figure 4c, the GGSN sends a Create PDP Context Response message to the SGSN containing appropriate information in the TID, PDP Addr, BB Protocol, Reordering Req, QoS Negot., PDP Config Options and Cause fields. In Figure 4d, the SGSN then sends an Activate PDP Context Accept message to the MS containing appropriate information in the NSAPI, PDP Type, PDP Addr, QoS Req, Radio Priority Level and PDP Config Options field.
- [16] Nevertheless, the GPRS standard does not specify whether private or public IP addresses are assigned to a requesting MS. Address assignment is not a standardization issue because a NAT is currently used at a PLMN boundary when private IP addresses are used. That is, current GPRS deployments rely on NATs at the GGSN when private addresses are assigned to a requesting MS. While this

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handles the problem of conserving IPv4 addresses, end-to-end security or application friendliness is not provided.

- [17] Even though a conventional PDP context activation procedure within a GPRS network assigns an IPv4 address to a mobile station, what is needed is a technique for assigning an IPv4 address to a mobile station in a GPRS network or a GPRS-based network that conserves IPv4 addresses and simultaneously maintains end-to-end security and application friendliness.

#### **BRIEF SUMMARY OF THE INVENTION**

- [18] The present invention provides a technique for assigning an IPv4 address to a mobile station in a GPRS or a GPRS-based network that conserves IPv4 addresses and simultaneously maintains end-to-end security and application friendliness. The present invention also provides a technique for assigning an IPv6 address to a mobile station in a GPRS or a GPRS-based network that conserves IPv6 addresses and simultaneously maintains end-to-end security and application friendliness.
- [19] The advantages of the present invention are provided by a General Packet Radio System (GPRS) communications network that includes a Serving GPRS Support Node (SGSN) and a Gateway GPRS Support Node (GGSN). The SGSN receives an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS communications network. The Activate PDP Context Request message has an APN field that contains information relating to a request for one of a private network address and a public network address. The SGSN sends a Create PDP Context Request message to the GGSN in response to the Activate PDP Protocol Context Request. The Create PDP Context Request message has an APN field that

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contains information relating to a request for one of a private network address and a public network address. The GGSN assigns one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message, and sends a Create PDP Context Response message to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station. In turn, the SGSN sends an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message. The Activate PDP Context Accept message contains information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

- [20] According to another aspect of the invention, a GPRS-based communications network includes an SGSN, a (GGSN) and a Border Gateway (BG). The SGSN receives an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network, such that the Activate PDP Context Request message has an APN field containing information relating to a request for one of a private network address and a public network address. The SGSN sends a Create PDP Context Request message from the SGSN to the BG in response to the Activate PDP Protocol Context Request. Accordingly, the Create PDP Context Request message has an APN field containing information relating to a request for one of a private network address and a public network address. The BG assigns one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message, and sends a Create PDP Context Response message from the BG to the SGSN containing the information assigning one of a private network address and a public network address

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to the mobile station based on the information contained in the APN field of the Create PDP Context Request message. The SGSN then sends an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message, such that the Activate PDP Context Accept message contains information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message. Alternatively, the SGSN sends the Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request, and the GGSN sends the Create PDP Context Request message from the GGSN to the BG. Accordingly, the BG sends the Create PDP Context Response message from the BG to the GGSN and the GGSN sends the Create PDP Context Response message to from the GGSN to the SGSN.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

- [21] The present invention is illustrated by way of example and not by way of limitation in the accompanying figures in which like reference numerals indicate similar elements and in which:
- [22] Figure 1 depicts a private administrative domain and a public administrative domain that are separated by a NAT for illustrating a conventional NAT-based address assignment operation;
- [23] Figure 2a depicts a private administrative domain and a public administrative domain that are separated by an RSIP server for illustrating a conventional RSIP-based address assignment operation;



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- [24] Figure 2b depicts a datagram within an RSIP-based system;
- [25] Figure 3 shows conventional generic GPRS protocol stacks for a mobile station (MS), base station subsystem (BSS), Serving GPRS Support Node (SGSN) and the Gateway GPRS Support Node (GGSN);
- [26] Figures 4a-4d illustrate a conventional PDP (Packet Data Protocol) context activation sequence within a GPRS network;
- [27] Figure 5 shows a GPRS network arrangement providing RSIP server functionality according to the present invention; and
- [28] Figure 6 shows a PLMN administrative domain for illustrating the process of an SGSN selecting a GGSN according to the present invention.

## **DETAILED DESCRIPTION OF THE INVENTION**

- [29] The present invention provides an RSIP-type technique that is used for assigning a network address to a mobile station in a GPRS network or a GPRS-based network (e.g., Universal Mobile Telecommunications System (UMTS)) that conserves IPv4 addresses and simultaneously maintains end-to-end security and application friendliness. Because the present invention relates to both IPv4 and IPv6 addresses, the term PDP, as used herein, is intended to be synonymous with both IPv4 and IPv6 addresses.
- [30] Figure 5 shows a GPRS network arrangement 500 providing RSIP functionality, and thereby provides the RSIP protocol for IPv4 and for IPv6 address assignment

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according to the present invention. It should be understood that GPRS network arrangement 500 can also be a GPRS-based network, such as UMTS. GPRS network arrangement 500 includes a public land mobile network (PLMN) administrative domain 501 and a PLMN administrative domain 502 that are coupled together through a packet data network 503, such as the Internet, and an inter-PLMN backbone network 504. A mobile station (MS) 2 is coupled to packet data network 503 in a well-known manner. Packet data network 503 provides a public address space, and inter-PLMN backbone network 504 provides a public address space/common private address space. PLMN 501 includes a Gateway GPRS Support Node (GGSN) 505, a Border Gateway (BG) 506, an intra-PLMN backbone 507 providing a private address space, a Serving GPRS Support Node (SGSN) 508, and an SGSN 509. An MS 1 is coupled to SGSN 508 in a well-known manner. While only one GGSN, one BG, and two SGSNs are shown as part of PLMN administrative domain 501, it should be understood that PLMN 501 could include any number of GGSNs, BGs and SGSNs. Moreover, while only a single MS 1 is shown in Figure 5 as being associated with PLMN administrative domain 501 and a single MS 2 as being associated with packet data network 503, it should be understood that a plurality of MSs could be coupled to any of the SGSNs of PLMN administrative domain 501 and with packet data network 503.

- [31] PLMN 502 includes a GGSN 510, a BG 511, an intra-PLMN backbone 512 providing a private address space, and an SGSN 513. An MS 3 is coupled to SGSN 513 in a well-known manner. While only one GGSN, one BG, and one SGSN are shown as part of PLMN administrative domain 502, it should be understood that PLMN 502 could include any number of GGSNs, BGs and SGSNs. Additionally, while only a single MS 3 is shown in Figure 5 as being associated with PLMN

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administrative domain 502, it should be understood that a plurality of MSs could be coupled to any of the SGSNs of PLMN administrative domain 502. It should also be understood that GPRS network arrangement 500 could include any number of PLMN administrative domains.

- [32] According to one embodiment of the invention, RSIP client functionality is provided at the SGSNs and the GGSNs, but is not needed at the MS or at the BGs. Further, RSIP server functionality is provided at GGSNs and BGs, but is not needed either at the MS or at the SGSNs.
- [33] For example, when MS 1 within PLMN 501 intends to communicate with MS 2 within public data network 503 (e.g., the Internet), MS 1 needs to use a public IP address to communicate with MS 2 because MS 2 has a public IP address. When a public IP address has not already been assigned to MS 1, MS 1 sends an Activate PDP Context Request message to SGSN 508, similar to Figure 4. The APN field in the Activate PDP Context Request message indicates that a public IP address is desired. Upon receiving the Activate PDP Context Request message having the APN field set, SGSN 508 initiates an RSIP Request message requesting an assignment of a public address. When GGSN 505 receives the RSIP Request message, GGSN 505, operating as an RSIP server, returns a suitable RSIP Response message containing the public IP address corresponding to the request from MS 1. When SGSN 508 receives the RSIP Response message from GGSN 505, SGSN 508 sends an Activate PDP Context Accept message to MS 1 containing the assigned public IP address.
- [34] Another example is when MS 1 within PLMN 501 intends to communicate with MS 3 within PLMN 502 through Inter-PLMN backbone 503. Inter-PLMN backbone 503 uses an address space that may either be private or public. Consequently, the

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address space used by Inter-PLMN backbone 503 for this example will be referred to as X. Thus, MS 1 needs to be assigned an IP address from address space X. MS 1 sends an Activate PDP Context Request message to SGSN 508. The APN field of the Activate PDP Context Request message indicates that an IP address from address space X is desired. Upon receiving the Activate PDP Context Request message having the APN field set, SGSN 508 can respond in one of two ways. First, SGSN 508, acting as an RSIP client, can send an RSIP request message to GGSN 505, which would be acting as an RSIP server. GGSN 505, acting as an RSIP client, then would send an RSIP request message to BG 506, which would be acting as an RSIP server. The response then traces its way back from BG 506 to GGSN 505 to SGSN 508. Alternatively, SGSN 508, acting as an RSIP client, would send an RSIP request message directly to BG 506, which would be acting as an RSIP server. SGSN 508 then receives a suitable RSIP response from BG 506. In either situation, SGSN 508 sends an appropriate Activate PDP Context Accept message to MS 1 that contains the IP address assigned upon receiving the RSIP response.

- [35] According to a second embodiment of the present invention, one of the fields in the Activate PDP Context Request message that is sent from the MS to the SGSN is the Access Point Name (APN) field. As previously mentioned, the current GPRS standard for assigning IPv4 addresses does not disclose a private or public IP address assignment to a requesting MS. In contrast, the present invention provides an MS that utilizes the APN field of the Activate PDP Context Request message as an extensible field by inserting information into the APN field for requesting either a public or a private address assignment. Moreover, the inserted information relating to whether a public or a private address assignment is desired can be an explicit indication, such as a particular bit (or bits) of the APN field being set, or implicit by

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the address of a GGSN contained in the APN field. When the indication is implicit, the SGSN determines the desired address assignment (public or private) based on the indicated GGSN. When the indicated GGSN interfaces to a public administrative domain, then the desired address is a public address. Conversely, when the indicated GGSN interfaces with a private administrative domain, then the desired address is a private address.

- [36] An SGSN then uses the information contained in the APN field for selecting a suitable GGSN for sending the Create PDP Context Request message. The Create PDP Context Request message sent from the SGSN to the selected GGSN transparently contains the APN field that was used within the Activate PDP Context Request message that was sent from the requesting MS to the SGSN.
- [37] Figure 6 shows a PLMN administrative domain 600 for illustrating the process of an SGSN selecting a GGSN according to the present invention. PLMN administrative domain 600 is coupled to three different administrative domains 601, 602 and 603 through GGSNs 604, 605 and 606, respectively, in a well-known manner. Administrative domains 601, 602 and 603 can be private or public administrative domains. PLMN administrative domain 600 also includes a Radio Access Network (RAN) 607 that is coupled to a core network 608 through an SGSN 609 in a well-known manner. GGSNs 604, 605 and 606 are each coupled to core network 609 in a well-known manner. Depending on the information contained in the APN field in the Activate PDP Context Request message that is sent from a requesting MS to SGSN 609, SGSN 609 selects a suitable GGSN (i.e., one of GGSN 604, GGSN 605 or GGSN 606). The Create PDP Context Request message is then sent from SGSN 609 to the selected GGSN.

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- [38] According to one embodiment of the present invention, a requesting MS indicates a preference for a private or a public address that is known to a GGSN using information contained in the APN field of a Create PDP Context Request message. Subsequently, the appropriate GGSN uses the information contained in the APN field for assigning a private address or a public address to the requesting MS.
- [39] Referring to Figure 5 to illustrate another aspect of the present invention in which mobility is not a factor, consider the situation of a datagram having an outer IP header and that is sent between an SGSN and a GGSN of the same PLMN, for example, PLMN 501. In such a situation, private addresses can always be used and, consequently, RSIP client or server functionality is not needed within any GPRS network element.
- [40] In the situation that the outer IP header of a datagram that is sent between an SGSN and GGSN in which SGSN and GGSN belong to different PLMNs, for example, when SGSN 508, which is part of PLMN 501, and GGSN 510, which is part of PLMN 501, two pairs of RSIP client-server functionality are required. For the first pair of RSIP client-server functionality, the RSIP client is located at SGSN 508 and an RSIP server is located at BG 506 in PLMN 501. For the second pair of RSIP client-server functionality, an RSIP client located at GGSN 510 and an RSIP server located at BG 511 in PLMN 502.
- [41] In the situation of a datagram having an inner IP header, an RSIP client is located at the SGSN and an RSIP server is located at the GGSN, regardless whether the GGSN and the SGSN are within the same PLMN or are in different PLMNs.

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- [42] Again referring to Figure 5 to illustrate yet another aspect of the present invention in which mobility is a factor, consider the situation in which a requesting MS that is associated with SGSN 513, such as MS 3, moves to a different location and is subsequently associated with, for example, SGSN 508. In this situation, consider the GGSN to be GGSN 510 and consider the outer IP header of a datagram. For this situation, two pairs of RSIP client-server functionality are required. For the first pair of RSIP client-server functionality, an RSIP client is located at SGSN 508 and an RSIP server located at BG 506. For the second pair of RSIP client-server functionality, an RSIP client is located at GGSN 510 and an RSIP server located at BG 511. This situation is identical to the situation without mobility because the outer IP header of the datagram is being used.
- [43] For the same scenario, now consider the inner IP header. In this situation, three pairs of RSIP client server functionalities are required. For the first RSIP client-server functionality, an RSIP client located at SGSN 513 and an RSIP server is located at GGSN 510. For the second RSIP client server functionality, an RSIP client is located at GGSN 510 and an RSIP server is located at BG 511. For the third RSIP client server functionality, an RSIP client is located at SGSN 508 and an RSIP server is located at GGSN 505.
- [44] While the invention has been described with respect to specific examples including presently preferred modes of carrying out the invention, those skilled in the art will appreciate that there are numerous variations and permutations of the above described systems and techniques that fall within the spirit and scope of the invention as set forth in the appended claims.

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## THE CLAIMS

What is claimed is:

1. A General Packet Radio System (GPRS) -based communications network comprising:

a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network,

the SGSN sending a Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address,

the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message, and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP



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Context Request message,

the SGSN sending an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message, the Activate PDP Context Accept message containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

2. The GPRS-based communications network according to claim 1, wherein the mobile station receives the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

3. The GPRS-based communications network according to claim 1, wherein the information contained in the APN field of the Activate PDP Context Request message explicitly indicates one of a private network address and a public network address.

4. The GPRS-based communications network according to claim 1, wherein the information contained in the APN field of the Activation PDP Context Request message implicitly indicates one of a private network address and a public network address.

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5. The GPRS-based communications network according to claim 1, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

6. The GPRS-based communications network according to claim 1, wherein the GPRS-based communications network is a GPRS communications network.

7. The GPRS-based communications network according to claim 1, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

8. A method for assigning a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving GPRS Support Node (SGSN) of the GPRS-based communications network from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network

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address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

9. The method according to claim 8, further comprising steps of:

sending a Create PDP Context Request message from the SGSN to a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

receiving a Create PDP Context Response message from the GGSN containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

10. The method according to claim 9, further comprising steps of:

receiving the Create PDP Context Request message from the SGSN at the GGSN;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

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sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

11. The method according to claim 8, further comprising steps of:

sending a Create PDP Context Request message from the SGSN to a Border Gateway (BG) of the GPRS-based communications network, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

receiving a Create PDP Context Response message at the SGSN from the BG containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

12. The method according to claim 11, further comprising steps of:

receiving the Create PDP Context Request message at the BG;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

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sending the Create PDP Context Response message to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

13. The method according to claim 12, further comprising steps of:

sending the Create PDP Context Request message from the SGSN to a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network;

sending the Create PDP Context Request message from the GGSN to the BG;

receiving the Create PDP Context Response message at the GGSN from the BG; and

receiving the Create PDP Context Response message at the SGSN from the GGSN.

14. The method according to claim 8, further comprising a step receiving at the mobile station the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

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15. The method according to claim 8, wherein the information contained in the APN field of the Activate PDP Context Request message explicitly indicates one of a private network address and a public network address.

16. The method according to claim 8, wherein the information contained in the APN field of the Activate PDP Context Request message implicitly indicates one of a private network address and a public network address.

17. The method according to claim 8, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

18. The method according to claim 8, wherein the GPRS-based communications network is a GPRS communications network.

19. The method according to claim 8, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

20. A General Packet Radio System (GPRS) -based communications network comprising:

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a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

a Border Gateway (BG) of the GPRS-based communications network,

the SGSN sending a Create PDP Context Request message from the SGSN to the BG in response to the Activate PDP Protocol Context Request, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address,

the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message, and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message,

the SGSN sending an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message, the Activate PDP Context Accept message containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN

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field of the Activate PDP Context Request message.

21. The GPRS-based communications network according to claim 20, further comprising a Gateway GPRS Support Node (GGSN), and

wherein the SGSN sending the Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request,

wherein the GGSN sending the Create PDP Context Request message from the GGSN to the BG, and

wherein the BG sends the Create PDP Context Response message from the BG to the GGSN and the GGSN sends the Create PDP Context Response message to from the GGSN to the SGSN.

22. The GPRS-based communications network according to claim 20, wherein the mobile station receives the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

23. The GPRS-based communications network according to claim 20, wherein the information contained in the APN field of the Activate PDP Context Request message



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explicitly indicates one of a private network address and a public network address.

24. The GPRS-based communications network according to claim 20, wherein the information contained in the APN field of the Activation PDP Context Request message implicitly indicates one of a private network address and a public network address.

25. The GPRS-based communications network according to claim 20, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

26. The GPRS-based communications network according to claim 20, wherein the GPRS-based communications network is a GPRS communications network.

27. The GPRS-based communications network according to claim 20, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

28. A method for assigning a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

receiving a Create Packet Data Protocol (PDP) Context Request message from a Serving GPRS Support Node (SGSN) at Gateway GPRS Support Node (GGSN), the Create

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PDP Context Request Message having an APN field containing information relating to a request for one of a private network address and a public network address for a mobile station of the GPRS-based communications network;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

29. The method according to claim 28, wherein the GPRS-based communications network is a GPRS communications network.

30. The method according to claim 28, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

31. A method for assigning a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

receiving a Create Packet Data Protocol (PDP) Context Request message from

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a Serving GPRS Support Node (SGSN) at Border Gateway (BG), the Create PDP Context Request Message having an APN field containing information relating to a request for one of a private network address and a public network address for a mobile station of the GPRS-based communications network;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the BG to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

32. A method for requesting an assignment of a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

sending an Activate Packet Data Protocol (PDP) Context Request message to a Serving GPRS Support Node (SGSN) of the GPRS-based communications network from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

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receiving at the mobile station an Activate PDP Context Accept message containing information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

33. The method according to claim 32, wherein the information contained in the APN field of the Activate PDP Context Request message explicitly indicates one of a private network address and a public network address.

34. The method according to claim 32, wherein the information contained in the APN field of the Activate PDP Context Request message implicitly indicates one of a private network address and a public network address.

35. The method according to claim 32, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

36. The method according to claim 32, wherein the GPRS-based communications network is a GPRS communications network.

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37. The method according to claim 32, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

38. A General Packet Radio System (GPRS) -based communications network comprising:

a Serving GPRS Support Node (SGSN) receiving a datagram containing a payload from a mobile station of the GPRS-based communications network, the datagram being intended for a destination station; and

a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network receiving a request from the SGSN for a public address for the mobile station, and in response, sending a reply to the SGSN containing a public address assigned to the mobile station,

the SGSN encapsulating the datagram with an outer IP header, an inner IP header and the payload, the outer IP header containing a private network address for the mobile station and a private network address for the SGSN, and the inner IP header containing the public address assigned to the mobile station and a public address for the destination station, and sending the encapsulated datagram to the GGSN,

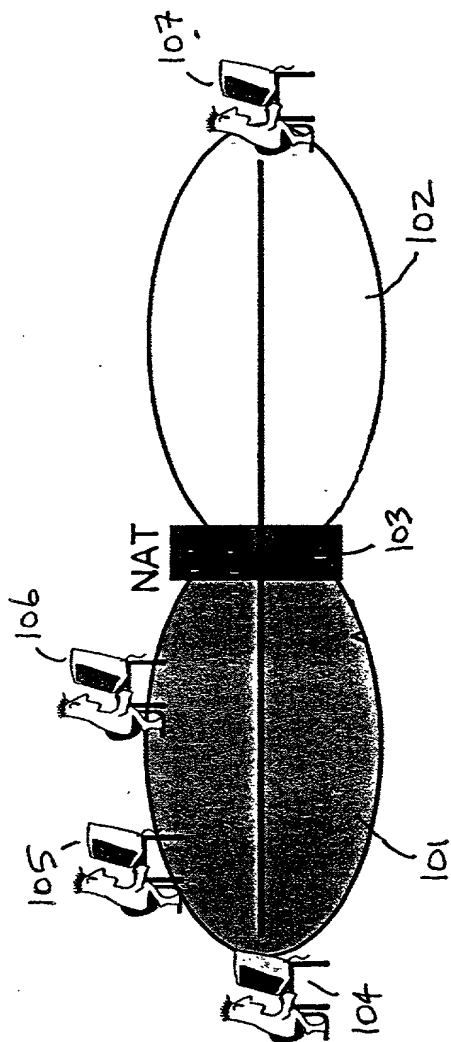
the GGSN receiving the encapsulated datagram, removing the outer IP header and sending the datagram encapsulated with the inner IP header to the destination station.

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**METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS  
NETWORKS THAT FACILITATES END-TO-END SECURITY**

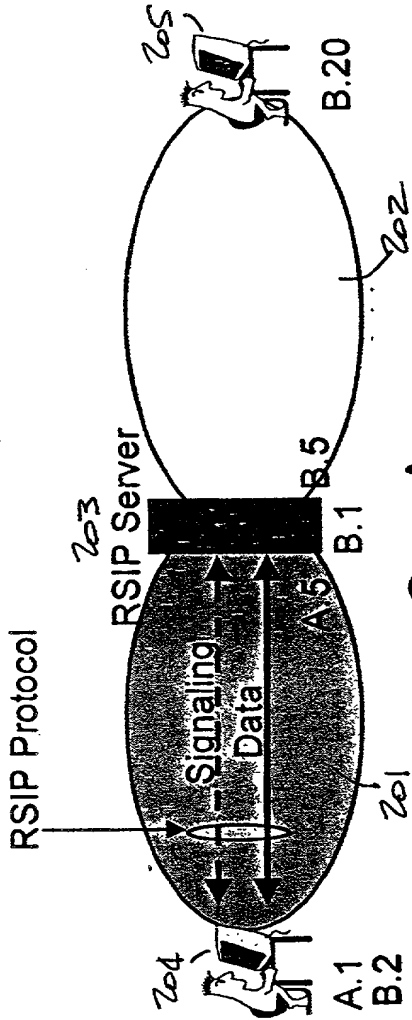
**ABSTRACT OF THE DISCLOSURE**

A General Packet Radio System (GPRS) -based communications network that includes a Serving GPRS Support Node (SGSN) and a Gateway GPRS Support Node (GGSN) assigns an IPv4 address to a mobile station in a GPRS-based network that conserves IPv4 addresses and simultaneously maintains end-to-end security and application friendliness. The SGSN receives from a mobile station an Activate PDP Context Request message having an APN field that requests a private or a public network address. The SGSN then sends a Create PDP Context Request message to the GGSN. The GGSN assigns a private or a public network address to the mobile station, and sends a Create PDP Context Response message to the SGSN. In turn, the SGSN sends an Activate PDP Context Accept message to the mobile station assigning a private or a public network address to the mobile station.



Prior Art  
FIG. 1

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206a

207 Outer IP Hdr	Src=A.1; Dst=A.5
208 Inner IP Hdr	Src=B.2; Dst=B.20
	Payload

206b

Src=B.2; Dst=B.20
Payload

Proc. A.1  
Fig. 2b



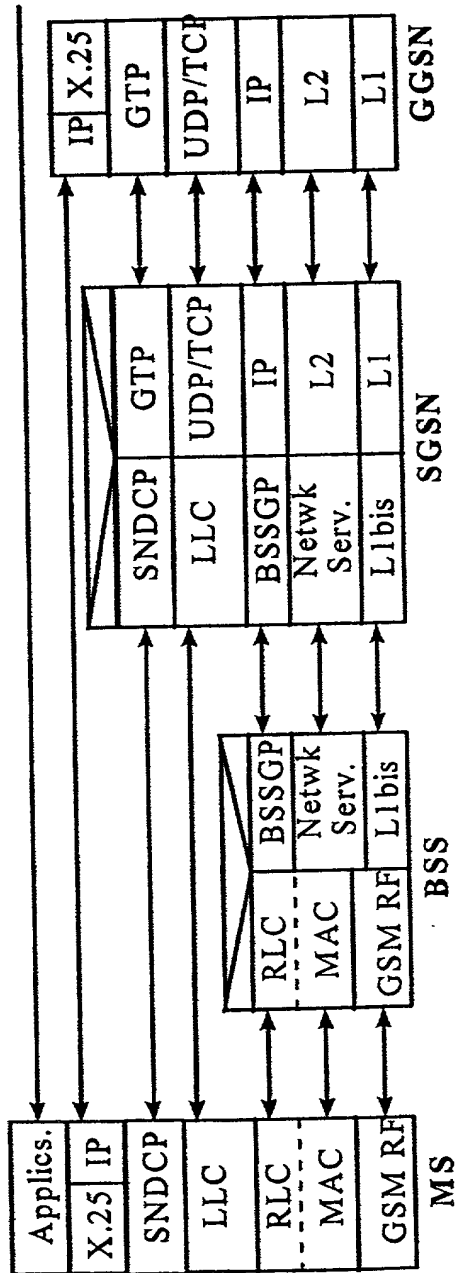


FIG. 4a

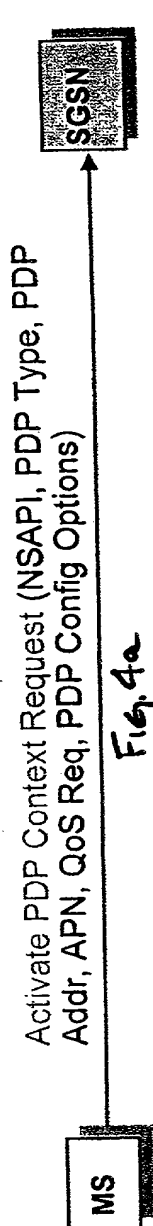


Fig. 4a

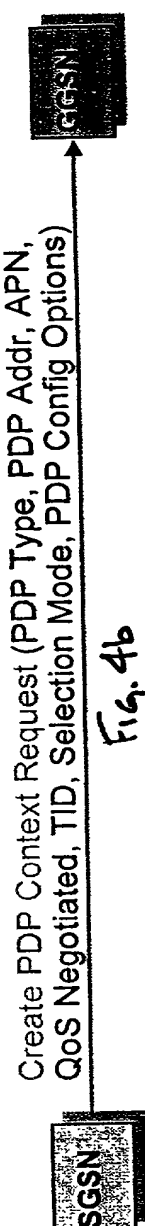


Fig. 4b

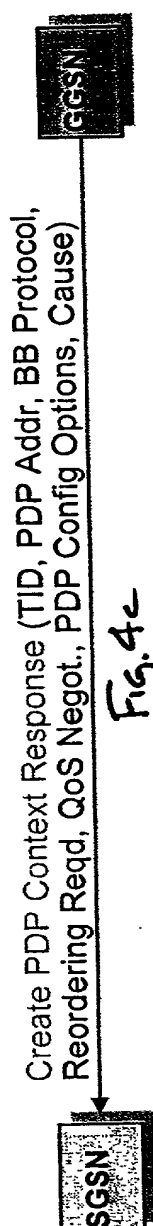


Fig. 4c

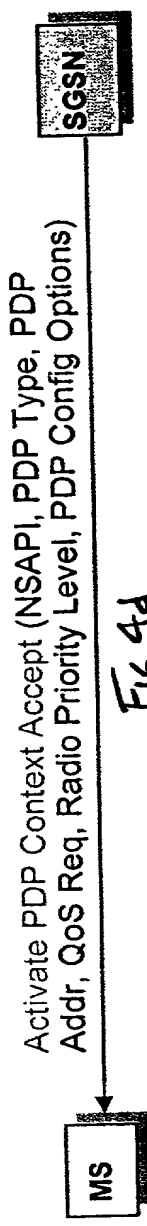


Fig. 4d

Prover APT  
Fig. 4

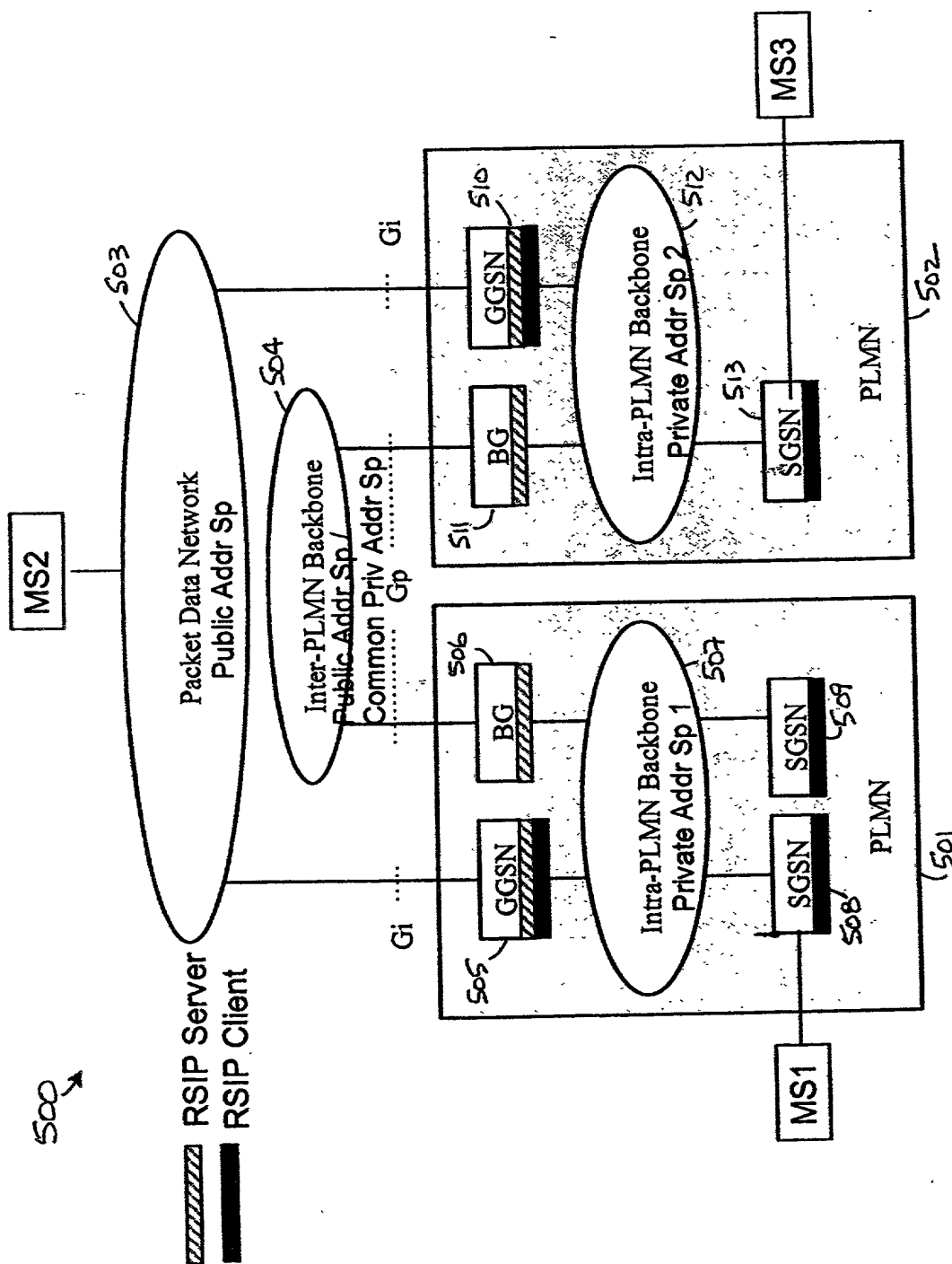


Fig. 5

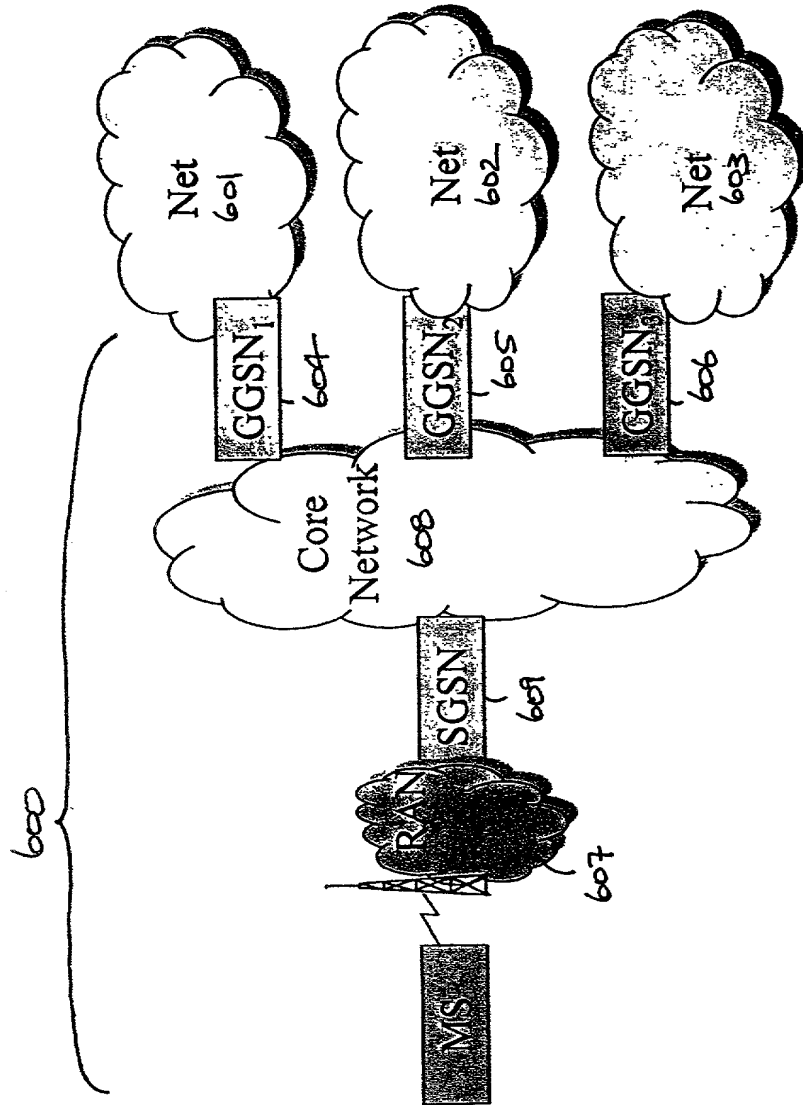


FIG. 6

Banner & Witcoff Ref. No.

Client Ref. No. NC 17391

### SOLE DECLARATION FOR PATENT APPLICATION

As the below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my names;

I believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS NETWORKS THAT FACILITATES END-TO-END SECURITY, the specification of which

- ☒ is attached hereto.  
☐ was filed on \_\_\_\_\_ as Application Serial Number \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).  
☐ was filed under the Patent Cooperation Treaty (PCT) and accorded International Application No. \_\_\_\_\_, filed \_\_\_\_\_, and amended on \_\_\_\_\_ (if any).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I hereby acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56(a).

#### Prior Foreign Application(s)

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Country	Application No.	Date of Filing (day month year)	Date of Issue (day month year)	Priority Claimed Under 35 U.S.C. §119

#### Prior United States Provisional Application(s)

I hereby claim priority benefits under Title 35, United States Code, §119(c)(1) of any U.S. provisional application listed below:

U.S. Provisional Application No.	Date of Filing (day month year)	Priority Claimed Under 35 U.S.C. §119(c)(1)

#### Prior United States Application(s)

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application Serial No.	Date of Filing (Day Month Year)	Status — Patented, Pending, Abandoned

12/18/01 TUE 12:46 FAX 781 238 4939

NOKIA TELECOMMUNICATIONS

00

Banner & Witcoff Ref. No. 005288.00014  
 Client Ref. No. NC 17391

**Power of Attorney**

And I hereby appoint, both jointly and severally, as my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith the practitioners at:

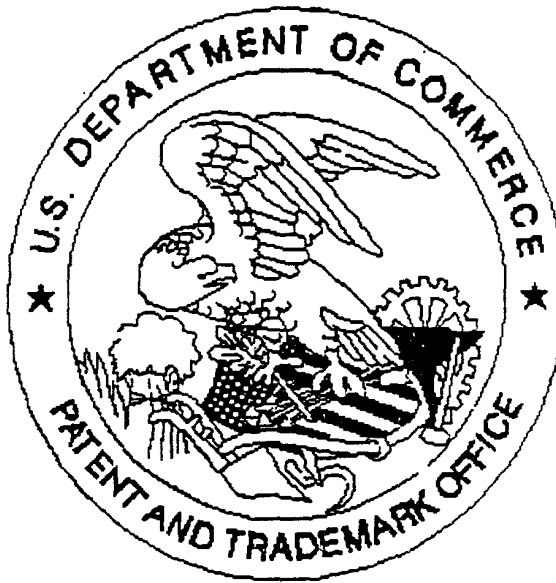
Customer Number: 22907 (WDC)

Please address all correspondence and telephone communications to the address and telephone number for this Customer Number.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature Senthil Sengodan Date 12/18/2001  
 Full Name of Inventor Sengodan Senthil  
 Family Name First Given Name Second Given Name  
 Residence 26 Beacon Street #38C, Burlington, MA 01803 Citizenship INDIA  
 Post Office Address 26 Beacon Street #38C, Burlington, MA 01803

United States Patent & Trademark Office  
Office of Initial Patent Examination -- Scanning Division



Application deficiencies found during scanning:

☐ Page(s) \_\_\_\_\_ of \_\_\_\_\_ were not present  
for scanning. (Document title)

☐ Page(s) \_\_\_\_\_ of \_\_\_\_\_ were not present  
for scanning. (Document title)

MOST OF THE DRAWINGS ARE DARK

☐ *Scanned copy is best available.*



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COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
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Bib Data Sheet

CONFIRMATION NO. 8170

<b>SERIAL NUMBER</b> 10/017,398	<b>FILING DATE</b> 12/18/2001 <b>RULE</b>	<b>CLASS</b> 370	<b>GROUP ART UNIT</b> 2661	<b>ATTORNEY DOCKET NO.</b> 005288.00014	
<b>APPLICANTS</b> Senthil Sengodan, Burlington, MA; <b>** CONTINUING DATA *****</b> <b>** FOREIGN APPLICATIONS *****</b> <b>IF REQUIRED, FOREIGN FILING LICENSE GRANTED</b> <b>** 01/17/2002</b>					
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance Verified and Acknowledged _____ Examiner's Signature _____ Initials _____		<b>STATE OR COUNTRY</b> MA	<b>SHEETS DRAWING</b> 6	<b>TOTAL CLAIMS</b> 38	<b>INDEPENDENT CLAIMS</b> 7
<b>ADDRESS</b> 22907					
<b>TITLE</b> Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security					
<b>FILING FEE RECEIVED</b> 1400	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		



PATENT APPLICATION SERIAL NO. \_\_\_\_\_

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE  
FEE RECORD SHEET

12/20/2001 MAJLDER1 00000064 190733 10017398

01 FC:101	740.00 CH
02 FC:102	336.00 CH
03 FC:103	324.00 CH

PTO-1556  
(5/87)

## PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2001

Application or Docket Number

005288.000/4

## CLAIMS AS FILED - PART I

(Column 1)

(Column 2)

TOTAL CLAIMS	38	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	38 minus 20 =	* 18
INDEPENDENT CLAIMS	7 minus 3 =	* 4
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

\* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY  
TYPE ☐OR OTHER THAN  
SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	370.00	OR	BASIC FEE	740.00
X\$ 9=		OR	X\$18=	324
X42=		OR	X84=	336
+140=		OR	+280=	
TOTAL		OR	TOTAL	1400

## CLAIMS AS AMENDED - PART II

(Column 1)

(Column 2)

(Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>				

SMALL ENTITY

OR OTHER THAN  
SMALL ENTITY

RATE	ADDI- TIONAL FEE		RATE	ADDI- TIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

(Column 1)

(Column 2)

(Column 3)

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>				

RATE	ADDI- TIONAL FEE		RATE	ADDI- TIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

(Column 1)

(Column 2)

(Column 3)

AMENDMENT C		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>				

RATE	ADDI- TIONAL FEE		RATE	ADDI- TIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

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<b>CLAIMS ONLY</b>							SERIAL NO. <u>10017398</u>	FILING DATE <u>12-18-01</u>
							APPLICANT(S)	
<b>CLAIMS</b>								
	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT			
	IND.	DEP.	IND.	DEP.	IND.	DEP.		
1							51	
2							52	
3							53	
4							54	
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42							92	
43							93	
44							94	
45							95	
46							96	
47							97	
48							98	
49							99	
50							100	
TOTAL IND.	7						TOTAL IND.	
TOTAL DEP.	31						TOTAL DEP.	
TOTAL CLAIMS	38						TOTAL CLAIMS	

\* MAY BE USED FOR ADDITIONAL CLAIMS OR ADMENDMENTS

FORM PTO-2022 (1-98)

U.S. DEPARTMENT OF COMMERCE  
 Patent and Trademark Office

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PTO/SB/21 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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# TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/017,398
Filing Date	December 18, 2001
First Named Inventor	Senthil Sengodan
Group Art Unit	2661
Examiner Name	TBA
Attorney Docket Number	005288.00014

Total Number of Pages in This Submission

RECEIVED

MAR 21 2002

Technology Center 2600

## ENCLOSURES (check all that apply)

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee Attached<br><input type="checkbox"/> Amendment / Response<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input checked="" type="checkbox"/> Information Disclosure Statement<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Response to Missing Parts/Incomplete Application<br><input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Assignment Papers (for an Application)<br><input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Licensing-related Papers<br><input type="checkbox"/> Petition<br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Request for Refund<br><input type="checkbox"/> CD, Number of CD(s) _____ | <input type="checkbox"/> After Allowance Communication to Group<br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input type="checkbox"/> Other Enclosure(s) (please identify below): |
|---|---|--|

Remarks

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm  
or  
Individual name

Ross A. Dannenberg, Reg. No. 49,024

Signature

Date

March 18, 2002

## CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this date:

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Date

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**PATENT APPLICATION**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

This application of:

Senthil Sengodan

Serial No: 10/017,398

Filed: December 18, 2001

)  
)  
)  
)  
)  
)

Group Art No. 2661

Examiner: TBA

Docket No. 005288.00014

**RECEIVED**  
MAR 21 2002  
Technology Center 2600

For: **METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS  
NETWORKS THAT FACILITATES END-TO-END SECURITY**

**INFORMATION DISCLOSURE STATEMENT**

Assistant Commissioner for Patents and Trademarks  
Washington, D.C. 20231

Sir:

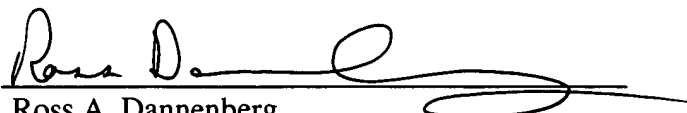
Pursuant to 37 C.F.R. §1.56 and in compliance with 37 C.F.R. §1.97, Applicant submits herewith two Form PTO-1449 identifying information for consideration by the Examiner. A copy of the reference cited is enclosed.

Applicant does not waive any right to take appropriate action to establish patentability over the listed documents should they be applied as a reference against the claims of the present application.


Consideration of the cited information and making the same of record in the prosecution of the above-noted application are respectfully requested. Should the Patent and Trademark Office determine that a fee is required, please charge our Deposit Account No. 19-0733.

Respectfully submitted,

**BANNER & WITCOFF, LTD.**

By:   
Ross A. Dannenberg  
Registration No. 49,024

1001 G. Street, N.W.  
Washington, D.C. 20001-4597  
(202) 508-9100  
Dated: March 18, 2002  
PIB/RAD/mmd

USPTO Form 1449 U.S. Department of Commerce Patent and Trademark Office				<b>RECEIVED</b> <b>MAR 21 2002</b> Technology Center 2600		Attorney Docket No. 005288.00014		Serial No. 10/017,398	
<b>INFORMATION DISCLOSURE CITATION</b> Sheet 1 of 2				Applicant(s): Senthil Sengodan				Filing Date: December 18, 2001	
								Group: 2661	
<b>U.S. PATENT DOCUMENTS</b>									
Examiner Initial	Patent No.	Date	Name	Class	Subclass	Filing Date (if appropriate)			
<b>FOREIGN PATENT DOCUMENTS</b>									
Examiner Initial	Document No.	Date	Country	Class	Subclass	Translation			
						YES NO			
<b>OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)</b>									
	R. Hinden et al., "IP Version 6 Addressing Architecture", July 1998, <a href="http://www.ietf.org/rfc/rfc2373.txt?number=2373">http://www.ietf.org/rfc/rfc2373.txt?number=2373</a> printed on March 13, 2002, 25 pages								
	S. Kent et al., "Security Architecture For The Internet Protocol", November 1998, <a href="http://www.ietf.org/rfc/rfc2401.txt?number=2401">http://www.ietf.org/rfc/rfc2401.txt?number=2401</a> printed on March 13, 2002, 62 pages								
	P. Srisuresh et al., "IP Network Address Translator (NAT) Terminology and considerations", August 1999, <a href="http://www.ietf.org/rfc/rfc2663.txt?number=2663">http://www.ietf.org/rfc/rfc2663.txt?number=2663</a> , printed on March 13, 2002, 29 pages								
	M. Borella et al., "Realm Specific IP: Framework", October 2001, <a href="http://www.ietf.org/rfc/rfc3102.txt?number=3102">http://www.ietf.org/rfc/rfc3102.txt?number=3102</a> , printed on March 13, 2002, 29 pages								
	M. Borella et al., "Realm Specific IP: Protocol Specification", October 2001, <a href="http://www.ietf.org/rfc/rfc3103.txt?number=3103">http://www.ietf.org/rfc/rfc3103.txt?number=3103</a> , printed on March 13, 2002, 51 pages								
	G. Montenegro et al., "RSIP Support for End-to-end Ipsec", October 2001, <a href="http://www.ietf.org/rfc/rfc3104.txt?number=3104">http://www.ietf.org/rfc/rfc3104.txt?number=3104</a> , printed on March 13, 2002, 18 pages								
	J. Kempf et al., "Finding an RSIP Server with SLP", October 2001, <a href="http://www.ietf.org/rfc/rfc3105.txt?number=3105">http://www.ietf.org/rfc/rfc3105.txt?number=3105</a> , printed on March 13, 2002, 11 pages								
	ETSI EN 301 344 V7.1.1 (2000-01), "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Service description; Stage 2 (GSM 03.60 version 7.1.1 Release 1998), 115 pages								
<b>EXAMINER</b>					<b>DATE CONSIDERED</b>				
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.									

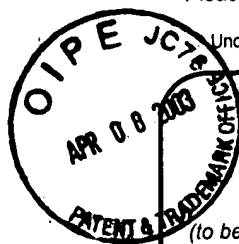
PTO/SB/21 (08-00)

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Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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# TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

<b>TRANSMITTAL FORM</b> (to be used for all correspondence after initial filing)	Application Number	10/017,398	
	Filing Date	December 18, 2001	
	First Named Inventor	Senthil Sengodan	
	Group Art Unit	2661	
	Examiner Name	TBA	
Total Number of Pages in This Submission		Attorney Docket Number	005288.00014

## ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input checked="" type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks		<b>RECEIVED</b> APR 09 2003 Technology Center 2600

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

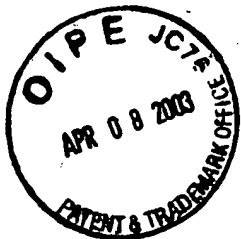
Firm or Individual name	Bradley C. Wright, Reg. No. 38,061		
Signature	by <i>Bradley C. Wright</i>		Reg. No. 49,024
Date	April 8, 2003		

## CERTIFICATE OF MAILING

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Signature		Date	

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 3  
 04/18/03



**PATENT APPLICATION**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	)	Group Art Unit: 2661
	)	
Senthil Sengodan	)	Examiner: TBA
	)	
Serial No. 10/017,398	)	Attorney Docket No. 005288.00014
	)	
Filed: December 18, 2001	)	

For: METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS  
NETWORKS THAT FACILITATES END-TO-END SECURITY

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**INFORMATION DISCLOSURE STATEMENT**

Assistant Commissioner of Patents  
Washington, D.C. 20231

Sir:

In accordance with 37 C.F.R. §1.97 and §1.98, enclosed is a PTO Form-1449 listing art for consideration by the Examiner. We hereby certify under 37 CFR §1.97(e)(1) that each item of information contained in the Information Disclosure Statement filed concurrently herewith was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of said Information Disclosure Statement.

We further certify under 37 C.F.R. § 1.704 (d) that each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the information disclosure statement.

These documents were cited by the International Searching Authority for corresponding International Application No. PCT/IB02/05385 on March 24, 2003. A copy of the search report is also enclosed.



**Information Disclosure Statement**


Serial No. 10/017,398

Consideration of this information is respectfully requested.

The submission of the listed documents is not intended as an admission that any such documents constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed documents as a competent reference against the claims of the present application.

Respectfully submitted,

Date: April 8, 2003

By:   
Bradley C. Wright  
Registration No. 38,061

Banner & Witcoff, LTD  
1001 G Street, N.W.  
Washington, D.C. 20001-4597  
(202) 508-9100

**Reg. No. 49,024**

BCW/RAD/mmd

**Information Disclosure Statement**

Serial No. 10/017,398

Sheet 1 of 1

PTO-1449 (Modified)  U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. 005288.00014	SERIAL NUMBER 10/017,398
	APPLICANT Senthil Sengodan	
	FILING DATE December 18, 2001	GROUP ART UNIT 2661

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	6,353,891	3/5/02	Borella et al.			
	5,793,763	8/11/98	Mayes et al.			
	5,708,655	1/13/98	Toth et al.			
	5,590,133	12/31/96	Billström et al.			

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APR 04 2003

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**FOREIGN PATENT DOCUMENTS**

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

Search Report

EXAMINER	DATE CONSIDERED
EXAMINER: Initial citation if reference was considered. Draw line through citation if not in conformance to MPEP 609 and not considered. Include copy of this form with next communication to applicant.	

IDS w/1449 form filed: April 8, 2003



## UNITED STATES PATENT AND TRADEMARK OFFICE

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 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
10/017,398		2662	06B0

**Change of Address/Power of Attorney**

The following fields have been set to Customer Number 22908 on

- Correspondence Address
- Maintenance Fee Address

**The address of record for Customer Number 22908 is:**

BANNER & WITCOFF, LTD.  
 TEN SOUTH WACKER DRIVE  
 SUITE 3000  
 CHICAGO, IL 60606

The Practitioners of record for Customer Number 22908 are:

**PTO INSTRUCTIONS:**

Please take the following action when the correspondence address has been changed to a customer number:

- 1) Add 'ADDRESS CHANGE TO CUSTOMER NUMBER' on the next available content line of the File Jacket.
- 2) Put a line through the old address on the File Jacket and enter the Customer Number as the new address.
- 3) File this Notice in the File Jacket.

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Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	7736	GPRS	US-PGPUB; USPAT	OR	OFF	2005/09/08 08:44
L2	185	PDP with (request adj message\$3)	US-PGPUB; USPAT	OR	OFF	2005/09/08 08:45
L3	171	1 and 2	US-PGPUB; USPAT	OR	OFF	2005/09/08 08:46
L4	741	(private with network with address) and (public with network with address)	US-PGPUB; USPAT	OR	OFF	2005/09/08 08:47
L5	2	3 and 4	US-PGPUB; USPAT	OR	OFF	2005/09/08 08:52
L6	1598	(private with address) and (public with address)	US-PGPUB; USPAT	OR	OFF	2005/09/08 08:54
L7	5	3 and 6	US-PGPUB; USPAT	OR	OFF	2005/09/08 08:54

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	3075	(370/395.3,349,338).CCLS.	US-PGPUB; USPAT	OR	OFF	2005/09/08 16:45
S2	7736	GPRS	US-PGPUB; USPAT	OR	OFF	2005/09/08 16:46
S3	443	S1 and S2	US-PGPUB; USPAT	OR	OFF	2005/09/08 16:46
S4	117	S3 and PDP	US-PGPUB; USPAT	OR	OFF	2005/09/08 17:42
S5	46044	network with address	US-PGPUB; USPAT	OR	OFF	2005/09/08 16:47
S6	62	S4 and S5	US-PGPUB; USPAT	OR	OFF	2005/09/08 16:48
S7	1262409	(public or global or external)	US-PGPUB; USPAT	OR	OFF	2005/09/08 16:50
S8	59	S6 and S7	US-PGPUB; USPAT	OR	OFF	2005/09/08 16:50
S9	520701	private or local	US-PGPUB; USPAT	OR	OFF	2005/09/08 16:51
S10	39	S8 and S9	US-PGPUB; USPAT	OR	OFF	2005/09/08 16:51

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	11	sengodan-senthil.IN.	US-PGPUB; USPAT	OR	OFF	2005/09/14 17:07



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,398	12/18/2001	Senthil Sengodan	005288.00014	8170
22908	7590	09/21/2005	EXAMINER	
BANNER & WITCOFF, LTD. TEN SOUTH WACKER DRIVE SUITE 3000 CHICAGO, IL 60606			NGUYEN, HAO X	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/017,398	SENGODAN, SENTHIL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hao X. Nguyen	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/18/2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |



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## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:  
Figures 1-4 should be labeled "Prior Art" in the section "Brief Description of the Drawings" of the specification. Appropriate correction is required.

### ***Claim Objections***

2. Claims are objected to because of the following informalities: the first page of the claims is put at the end of the specification file. Appropriate correction is required.

Claim 21 is objected to because of the following informalities: the clause "...GGSN sends the Create PDP Context Response message to from the GGSN to the SGSN" should be "...GGSN sends the Create PDP Context Response message from the GGSN to the SGSN". Appropriate correction is required.

### ***Drawings***

3. The drawings are objected to because Figure 2b should label Payload as "Payload 209". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is

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being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

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351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 38 is rejected under 35 U.S.C. 102 (e) as being anticipated by Takeda et al. (US Pub. No. 2001/0048686 A1), hereafter Takeda.

Referring to Figures 1 and 5, Takeda discloses a gateway 3b that receives a Create PDP Context Request message 110 from a subscriber node 4a. An APN included in a message 110 is used for identifying a communication network corresponding to the current communication request (paragraphs [0091]; claim 38 - a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network receiving a request from the SGSN for a public address for the mobile station).

Takeda also discloses a gateway node 3b that sends a Create PDP Context Response message 120 including an IP address allocated to a mobile terminal 7, to a subscriber node 4a (paragraph [0097]; claim 38 - and in response, sending a reply to the SGSN containing a public address assigned to the mobile station).

Referring to Figures 1, 6 and 7, Takeda discloses an IP packet 131 that is sent from a mobile terminal 7 to a gateway 3b. The IP packet contains a payload 230 and is intended for a destination server 18 (paragraph [0100], [0101], [0105],

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and [0109]; claim 38 - a Serving GPRS Support Node (SGSN) receiving a datagram containing a payload from a mobile station of the GPRS-based communications network, the datagram being intended for a destination station).

Referring to Figures 1 and 7, for packet transmission, Takeda discloses an IP address of a mobile terminal 7 that is set in a source address field 212 of the IP header 210. An IP address of a gateway 3b is set in an address field 213. An IP address of a server 18 is set in an address field 222 of a routing header 220.

Referring to Figures 1 and 8, upon receipt of the IP packet 131, a gateway node 3b carries out IP routing header processing. An IP address of the gateway 3b is set in an address field 222. An IP address of the server 18 is set in a destination address field 213. An IP address of a VPN (Virtual Private Network) is set as a destination address in a VPN tunneling header 240.

Referring to Figure 6, Takeda discloses a gateway node 3b that adds a VPN tunneling header 240 to a received IP packet to produce a packet 132. The packet 132 is then sent to a VPN equipment 2 (paragraphs [0101]-[0104]; claim 38 - the SGSN encapsulating the datagram with an outer IP header, an inner IP header and the payload, the outer IP header containing a private network address for the mobile station and a private network address for the SGSN, and the inner IP header containing the public address assigned to the mobile station and a public address for the destination station, and sending the encapsulated datagram to the GGSN).

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Referring to Figures 6 and 8, upon receiving a packet 132, Takeda discloses a VPN equipment 2 that removes a VPN tunneling header 240 to attain an IP packet 133 corresponding to the original packet. The IP packet 133 is then sent to a destination server 18 (paragraph [0105]; claim 38 - the GGSN receiving the encapsulated datagram, removing the outer P header and sending the datagram encapsulated with the inner IP header to the destination station).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al. (US Pat. No. 6,687,252 B1), in view of Takeda et al. (US Pub. No. 2001/0048686 A1).

In regards to claim 1,

Referring to Figure 1, Bertrand discloses a Mobile Terminal (MT) 11 that sends an Activate PDP Context Request message 22 to a SGSN 12 to activate the PDP Context (column 5, lines 4-5; claim 1- a Serving GPRS Support Node

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(SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network).

In regards to claims 1 and 28,

Referring to Figure 1, Bertrand also discloses a SGSN 12 that sends a Create PDP Context Request message to a GGSN (Gateway GPRS Service Node) 15 to create the PDP context (column 5, lines 5-8; claims 1 and 28 - the SGSN sending a Create PDP Context Request message From the SGSN to the GGSN in response to the Activate PDP Protocol Context Request).

Referring to Figure 1, Bertrand discloses a GGSN that sends a Radius Access Request to a Radius Server (RS). The RS performs its authentication functions, and provides an IP address in a Radius Access Accept message that is sent to the GGSN (column 5, lines 15-26 and 60-61; claims 1 and 28 - the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message).

The GGSN then returns a Create PDP Context Response message 27 to a SGSN (column 5, lines 64-66; claims 1 and 28 – and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message).

In regards to claims 1 and 2,

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The SGSN provides an IP address to the MT in an Activate PDP Context Accept message (column 5, lines 66-67; claims 1 and 2 - the SGSN sending an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message, the Activate PDP Context Accept message containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message).

In regards to claim 4,

Referring to Figure 2, Bertrand discloses a GGSN that can examine a APN at step 37, and use these parameters to create a VPN (virtual private network) tunnel to a remote site (column 7, lines 5-11 and 66-67; claim 4 – the information contained in the APN field of the Activation PDP Context Request message implicitly indicates one of a private network address and a public network address).

In regards to claim 5,

Bertrand discloses a GGSN that allocates an IP address. A public IP address is allocated only if a MT is a user of a real-time. Otherwise, a private IP address is allocated (Abstract; column 1, lines 34-37 and 48-67; column 3, lines 3-10; claim 5 – the private network address and the public network address are each one of an Pv4 network address and an IPv6 network address).

In regards to claims 6 and 29,

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Bertrand discloses a system that dynamically allocates IP addresses to mobile terminals operating in a General Packet Radio Service (GPRS) network (column 1, lines 5-10; claims 6 and 29 - the GPRS-based communications network is a GPRS communications network).

In regards to claims 8 and 32,

Referring to Figure 1, Bertrand discloses a Mobile Terminal (MT) 11 sends an Activate PDP Context Request message 22 to a SGSN 12 to activate the PDP Context (column 5, lines 4-5; claims 8 and 32 - receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving GPRS Support Node (SGSN) from a mobile station of the GPRS-based communications network).

Referring to Figure 1, Bertrand discloses a SGSN that provides an IP address to the MT in an Activate PDP Context Accept message (column 5, lines 66-67; claims 8 and 32 - sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address based on the information contained in the APN field of the Activate PDP Context Request message).

In regards to claim 9,

Bertrand discloses a SGSN 12 that sends a Create PDP Context Request message to a GGSN (Gateway GPRS Service Node) 15 to create the PDP context (column 5, lines 5-8; claim 9 - sending a Create PDP Context Request message from the SGSN to a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network).



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Bertrand also discloses a GGSN that returns a Create PDP Context Response message 27 to a SGSN (column 5, lines 64-66; claim 9 – and receiving a Create PDP Context Response message from the GGSN containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message).

In regards to claim 10,

Bertrand also discloses a SGSN 12 that sends a Create PDP Context Request message to a GGSN (Gateway GPRS Service Node) 15 to create the PDP context (column 5, lines 5-8; claim 10 - receiving the Create PDP Context Request message from the SGSN at the GGSN).

Referring to Figure 1, Bertrand also discloses a GGSN that sends a Radius Access Request to a Radius Server (RS). The RS performs its authentication functions, and provides an IP address in a Radius Access Accept message that is sent to the GGSN (column 5, lines 15-26, 60-61, and 64-66; claim 10 – assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message).

The GGSN then returns a Create PDP Context Response message 27 to a SGSN (column 5, lines 64-66; claim 10 – and sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the

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mobile station based on the information contained in the APN field of the Create PDP Context Request message).

In regards to claim 11,

Referring to Figure 1, Bertrand discloses a SGSN that sends a Create PDP Context Request to a GGSN. The GGSN then sends a Radius Access Request to a Radius Server (RS) (column 5, lines 5-18; claim 11 – sending a Create PDP Context Request message from the SGSN to a Border Gateway (BG) of the GPRS-based communications network).

Bertrand also discloses a RS that performs its authentication functions, and provides an IP address in a Radius Access Accept message that is sent to the GGSN. The GGSN then sends a Create PDP Context Response message to the SGSN (column 5, lines 15-26 and 60-66; claim 11 – and receiving a Create PDP Context Response message at the SGSN from the BG containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message).

In regards to claim 12,

Referring to Figure 1, Bertrand discloses a SGSN that sends a Create PDP Context Request to a GGSN. The GGSN then sends a Radius Access Request to a Radius Server (RS) (column 5, lines 5-18; claim 12 – receiving the Create PDP Context Request message at the BG).

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Bertrand also discloses a RS that performs its authentication functions, and provides an IP address in a Radius Access Accept message that is sent to the GGSN (column 5, lines 15-26, 60-61, and 64-66; claim 12 – assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message).

Bertrand also discloses a RS that performs its authentication functions, and provides an IP address in a Radius Access Accept message that is sent to the GGSN. The GGSN then sends a Create PDP Context Response message to the SGSN (column 5, lines 15-26 and 60-61; claim 12 – and sending the Create PDP Context Response message to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station and based on the information contained in the APN field of the Create PDP Context Request message).

In regards to claim 13,

Referring to Figure 1, Bertrand discloses a SGSN that sends a Create PDP Context Request to a GGSN (column 5, lines 5-18; claim 13 – sending the Create PDP Context Request message from the SGSN to a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network). The GGSN then sends a Radius Access Request to a Radius Server (RS) (column 5, lines 16-18; claim 13 - sending the Create PDP Context Request message from the GGSN to the BG).

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Bertrand also discloses a RS that performs its authentication functions, and provides an IP address in a Radius Access Accept message that is sent to the GGSN (column 5, lines 62-64; claim 13 – receiving the Create PDP Context Response message at the GGSN from the BG). The GGSN then sends a Create PDP Context Response message to the SGSN (column 5, lines 64-66; claim 13 – and receiving the Create PDP Context Response message at the SGSN from the GGSN).

In regards to claim 14,

A SGSN provides an IP address to a MT in an Activate PDP Context Accept message (column 5, lines 66-67; claim 14 - receiving at the mobile station the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message).

In regards to claims 16 and 34,

Referring to Figure 2, Bertrand discloses a GGSN that can examine a APN at step 37, and use these parameters to create a VPN (virtual private network) tunnel to a remote site (column 7, lines 5-11 and 66-67; claims 16 and 34 – the information contained in the APN field of the Activation PDP Context Request message implicitly indicates one of a private network address and a public network address).

In regards to claims 17 and 35,

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Bertrand discloses a GGSN that allocates an IP address. A public IP address is allocated only if a MT is a user of a real-time. Otherwise, a private IP address is allocated (Abstract; column 1, lines 34-37 and 48-67; column 3, lines 3-10; claims 17 and 35 – the private network address and the public network address are each one of an Pv4 network address and an IPv6 network address).

In regards to claims 18 and 36,

Bertrand discloses a system that dynamically allocates IP addresses to mobile terminals operating in a General Packet Radio Service (GPRS) network (column 1, lines 5-10; claims 18 and 36 - the GPRS-based communications network is a GPRS communications network).

In regards to claim 20,

Referring to Figure 1, Bertrand discloses a Mobile Terminal (MT) 11 sends an Activate PDP Context Request message 22 to a SGSN 12 to activate the PDP Context (column 5, lines 4-5; claim 20 - a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network).

In regards to claims 20 and 31,

Referring to Figure 1, Bertrand discloses a SGSN that sends a Create PDP Context Request to a GGSN. The GGSN then sends a Radius Access Request to a Radius Server (RS) (column 5, lines 5-18; claims 20 and 31 – the SGSN sending a Create PDP Context Request message from the SGSN to the BG in response to the Activate PDP Protocol Context Request).

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Referring to Figure 1, Bertrand discloses a RS that performs its authentication functions, and provides an IP address in a Radius Access Accept message that is sent to the GGSN (column 5, lines 15-26, 60-61, and 64-66; claims 20 and 31 – the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message).

The GGSN then sends a Create PDP Context Response message to the SGSN (column 5, lines 15-26 and 60-61; claims 20 and 31 – and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message).

In regards to claims 20 and 22,

Bertrand also discloses a SGSN that provides an IP address to the MT in an Activate PDP Context Accept message (column 5, lines 66-67; claims 20 and 22 - the SGSN sending an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message, the Activate PDP Context Accept message containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message).

In regards to claim 21,

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Referring to Figure 1, Bertrand discloses a SGSN that sends a Create PDP Context Request to a GGSN (column 5, lines 5-18; claim 21 – the SGSN sending the Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request).

The GGSN then sends a Radius Access Request to a Radius Server (RS) (column 5, lines 16-18; claim 21 - the GGSN sending the Create PDP Context Request message from the GGSN to the BG).

Referring to Figure 1, Bertrand discloses a RS that performs its authentication functions, and provides an IP address in a Radius Access Accept message that is sent to a GGSN (column 5, lines 62-64; claim 21 – the BG sends the Create PDP Context Response message from the BG to the GGSN).

The GGSN then sends a Create PDP Context Response message to a SGSN (column 5, lines 64-66; claim 21 – and the GGSN sends the Create PDP Context Response message from the GGSN to the SGSN).

In regards to claim 24,

Referring to Figure 2, Bertrand discloses a GGSN that can examine a APN at step 37, and use these parameters to create a VPN (virtual private network) tunnel to a remote site (column 7, lines 5-11 and 66-67; claim 24 – the information contained in the APN field of the Activation PDP Context Request message implicitly indicates one of a private network address and a public network address).

In regards to claim 25

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Bertrand discloses a GGSN that allocates an IP address. A public IP address is allocated only if a MT is a user of a real-time. Otherwise, a private IP address is allocated (Abstract; column 1, lines 34-37 and 48-67; column 3, lines 3-10; claim 25 – the private network address and the public network address are each one of an Pv4 network address and an IPv6 network address).

In regards to claim 26,

Bertrand discloses a system that dynamically allocates IP addresses to mobile terminals operating in a General Packet Radio Service (GPRS) network (column 1, lines 5-10; claim 26 - the GPRS-based communications network is a GPRS communications network).

However, Bertrand does not disclose an Activate PDP Context Request message that has an APN field containing information relating to a request for one of a private network address and a public network address, as specified in claims 1 and 3.

Referring to Figure 5, Takeda discloses an Activate PDP Context Request message 109 that has an APN field containing information relating to a request for one of a private network address and a public network address (paragraphs [0026], [0089] and [0090]; claims 1 and 3 - the Activate PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address).



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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify an Activate PDP Context Request message 109 of Bertrand to have an APN field containing information relating to a request for one of a private network address and a public network address, as shown by Takeda, since this APN field would provide a means to identify a GGSN included in the IP packet communication path (Takeda; Figures 1 and 5; paragraphs [0089]-[0091]).

However, Bertrand does not disclose a Create PDP Context Request message that has an APN field containing information relating to a request for one of a private network address and a public network address, as specified in claims 1 and 28.

Referring to Figure 5, Takeda discloses a Create PDP Context Request message 109 that has an APN field containing information relating to a request for one of a private network address and a public network address (paragraphs [0027], [0071], [0072] and [0091]; claims 1 and 28 - the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify a Create PDP Context Request message 110 of Bertrand to have an APN field containing information relating to a request for one of a private network address and a public network address, as shown by Takeda, since this APN field would provide a means to identify a destination-of-

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connection external network included in the IP packet communication path (Takeda; Figures 1 and 5; paragraphs [0027] and [0091]).

However, Bertrand does not disclose an Activate PDP Context Request message that has an APN field containing information relating to a request for one of a private network address and a public network address, as specified in claims 8, 15, 32, and 33.

Referring to Figure 5, Takeda discloses an Activate PDP Context Request message 109 that has an APN field containing information relating to a request for one of a private network address and a public network address (paragraphs [0026], [0089] and [0090]; claims 8, 15, 32, and 33 - the Activate PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify an Activate PDP Context Request message 109 of Bertrand to have an APN field containing information relating to a request for one of a private network address and a public network address, as shown by Takeda, since this APN field would provide a means to identify a GGSN included in the IP packet communication path (Takeda; Figures 1 and 5; paragraphs [0089]-[0091]).

However, Bertrand does not disclose a Create PDP Context Request message that has an APN field containing information relating to a request for

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one of a private network address and a public network address, as specified in claim 9.

Referring to Figure 5, Takeda discloses a Create PDP Context Request message 109 that has an APN field containing information relating to a request for one of a private network address and a public network address (paragraphs [0027], [0071], [0072] and [0091]; claim 9 - the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify a Create PDP Context Request message 110 of Bertrand to have an APN field containing information relating to a request for one of a private network address and a public network address, as shown by Takeda, since this APN field would provide a means to identify a destination-of-connection external network included in the IP packet communication path (Takeda; Figures 1 and 5; paragraphs [0027] and [0091]).

However, Bertrand does not disclose a Create PDP Context Request message that has an APN field containing information relating to a request for one of a private network address and a public network address, as specified in claim 11.

Referring to Figure 5, Takeda discloses a Create PDP Context Request message 109 that has an APN field containing information relating to a request for one of a private network address and a public network address (paragraphs

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[0027], [0071], [0072] and [0091]; claim 11 - the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify a Create PDP Context Request message 110 of Bertrand to have an APN field containing information relating to a request for one of a private network address and a public network address, as shown by Takeda, since this APN field would provide a means to identify a destination-of-connection external network included in the IP packet communication path (Takeda; Figures 1 and 5; paragraphs [0027] and [0091]).

However, Bertrand does not disclose an Activate PDP Context Request message that has an APN field containing information relating to a request for one of a private network address and a public network address, as specified in claims 20 and 23.

Referring to Figure 5, Takeda discloses an Activate PDP Context Request message 109 that has an APN field containing information relating to a request for one of a private network address and a public network address (paragraphs [0026], [0089] and [0090]; claims 20 and 23 - the Activate PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify an Activate PDP Context Request message 109 of

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Bertrand to have an APN field containing information relating to a request for one of a private network address and a public network address, as shown by Takeda, since this APN field would provide a means to identify a GGSN included in the IP packet communication path (Takeda; Figures 1 and 5; paragraphs [0089]-[0091]).

However, Bertrand does not disclose a Create PDP Context Request message that has an APN field containing information relating to a request for one of a private network address and a public network address, as specified in claims 20 and 31.

Referring to Figure 5, Takeda discloses a Create PDP Context Request message 109 that has an APN field containing information relating to a request for one of a private network address and a public network address (paragraphs [0027], [0071], [0072] and [0091]; claims 20 and 31 - the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify a Create PDP Context Request message 110 of Bertrand to have an APN field containing information relating to a request for one of a private network address and a public network address, as shown by Takeda, since this APN field would provide a means to identify a destination-of-connection external network included in the IP packet communication path (Takeda; Figures 1 and 5; paragraphs [0027] and [0091]).

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Claims 7, 19, 27, 30, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al. (US Pat. No. 6,687,252 B1), in view of Takeda et al. (US Pub. No. 2001/0048686 A1), further in view of White et al. (US Pub. No. 2003/0081578 A1), hereafter White.

Bertrand discloses the above limitations of claims 1, 8, 20, 28, and 32.

However, Bertrand does not disclose the GPRS-based communications network that is a Universal Mobile Telecommunications System.

Referring to Figure 2, White discloses a GPRS-based communications network that is a Universal Mobile Telecommunications System (paragraph [0002]; claims 7, 19, 27, 30 and 37 - the GPRS-based communications network is a Universal Mobile Telecommunications System).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have a GPRS-based communications network of Komiya to be a Universal Mobile Telecommunications System, as shown by White, so a mobile station can use a PDP context activation procedure to establish an internet protocol connectivity with an external Packet Data Network (PDN) for various data functions provided by 3G (White; paragraphs [0002] and [0003]).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Barnes et al. (US Pat. No. 6,711,147 B1) discloses Merged Packet Service and Mobile Internet Protocol.

Shi et al. (US Pub. No. 2004/0037242 A1) discloses Allocating Addresses to Mobile Stations.

Ibanez et al. (US Pub. No. 2003/0026230 A1) discloses Proxy Duplicate Address Detection for Dynamic Address Allocation.

Narvanen (US Pub. No. 2002/0080757 A1) discloses Arranging Packet Data Connections In Office System.

Depaoli, R.; Moiso, C. (Intelligent Network Workshop, 2001 IEEE 6-9 May 2001 Pages:4 – 8) discloses Network intelligence for GPRS.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hao X. Nguyen whose telephone number is 571-272-8195. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-8195. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through

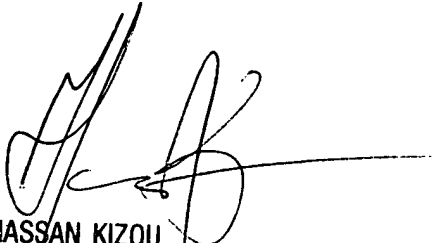
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Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hao X. Nguyen  
Examiner  
Art Unit 2662



HASSAN KIZOU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600





**Information Disclosure Statement**  
Serial No. 10/017,398

Sheet 1 of 1

PTO-1449 (Modified)  U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. 005288.00014	SERIAL NUMBER 10/017,398
	APPLICANT Senthil Sengodan	
	FILING DATE December 18, 2001	GROUP ART UNIT <del>2661</del> 2662

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
HxN	6,353,891	3/5/02	Borella et al.			
HxN	5,793,763	8/11/98	Mayes et al.			
HxN	5,708,655	1/13/98	Toth et al.			
HxN	5,590,133	12/31/96	Billström et al.			

RECEIVED

APR 04 2003

Technology Center 2600

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

Search Report

EXAMINER <i>Hao X Ng</i>	DATE CONSIDERED <i>9/7/2005</i>
EXAMINER: Initial citation if reference was considered. Draw line through citation if not in conformance to MPEP 609 and not considered. Include copy of this form with next communication to applicant.	

IDS w/1449 form filed: April 8, 2003

USPTO Form 1449 U.S. Department of Commerce Patent and Trademark Office <b>INFORMATION DISCLOSURE</b> <b>CITATION</b> Sheet 1 of 2		OIP MAR 18 2002 PATENT & TRADEMARK OFFICE		RECEIVED MAR 21 2002 Technology Center 2600		Attorney Docket No. 005288.00014		Serial No. 10/017,398	
Applicant(s): Senthil Sengodan						Filing Date: December 18, 2001			
						Group: 2661			
<b>U.S. PATENT DOCUMENTS</b>									
Examiner Initial	Patent No.	Date	Name	Class	Subclass	Filing Date (if appropriate)			
<b>FOREIGN PATENT DOCUMENTS</b>									
Examiner Initial	Document No.	Date	Country	Class	Subclass	Translation			
						YES NO			
<b>OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)</b>									
HxN	R. Hinden et al., "IP Version 6 Addressing Architecture", July 1998, <a href="http://www.ietf.org/rfc/rfc2373.txt?number=2373">http://www.ietf.org/rfc/rfc2373.txt?number=2373</a> printed on March 13, 2002, 25 pages								
HxN	S. Kent et al., "Security Architecture For The Internet Protocol", November 1998, <a href="http://www.ietf.org/rfc/rfc2401.txt?number=2401">http://www.ietf.org/rfc/rfc2401.txt?number=2401</a> printed on March 13, 2002, 62 pages								
HxN	P. Srisuresh et al., "IP Network Address Translator (NAT) Terminology and considerations", August 1999, <a href="http://www.ietf.org/rfc/rfc2663.txt?number=2663">http://www.ietf.org/rfc/rfc2663.txt?number=2663</a> , printed on March 13, 2002, 29 pages								
HxN	M. Borella et al., "Realm Specific IP: Framework", October 2001, <a href="http://www.ietf.org/rfc/rfc3102.txt?number=3102">http://www.ietf.org/rfc/rfc3102.txt?number=3102</a> , printed on March 13, 2002, 29 pages								
HxN	M. Borella et al., "Realm Specific IP: Protocol Specification", October 2001, <a href="http://www.ietf.org/rfc/rfc3103.txt?number=3103">http://www.ietf.org/rfc/rfc3103.txt?number=3103</a> , printed on March 13, 2002, 51 pages								
HxN	G. Montenegro et al., "RSIP Support for End-to-end Ipsec", October 2001, <a href="http://www.ietf.org/rfc/rfc3104.txt?number=3104">http://www.ietf.org/rfc/rfc3104.txt?number=3104</a> , printed on March 13, 2002, 18 pages								
HxN	J. Kempf et al., "Finding an RSIP Server with SLP", October 2001, <a href="http://www.ietf.org/rfc/rfc3105.txt?number=3105">http://www.ietf.org/rfc/rfc3105.txt?number=3105</a> , printed on March 13, 2002, 11 pages								
HxN	ETSI EN 301 344 V7.1.1 (2000-01), "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Service description; Stage 2 (GSM 03.60 version 7.1.1 Release 1998), 115 pages								
EXAMINER <i>HxN</i>						DATE CONSIDERED <i>9/7/2005</i>			
<small>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.</small>									

<b>Notice of References Cited</b>	Application/Control No. 10/017,398	Applicant(s)/Patent Under Reexamination SENGODAN, SENTHIL	
	Examiner Hao X. Nguyen	Art Unit 2662	Page 1 of 1

## U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,687,252 B1	02-2004	Bertrand et al.	370/401
	B	US-2001/0048686 A1	12-2001	Takeda et al.	370/401
	C	US-2003/0081578 A1	05-2003	White et al.	370/338
	D	US-6,711,147 B1	03-2004	Barnes et al.	370/338
	E	US-2004/0037242 A1	02-2004	Shi et al.	370/329
	F	US-2003/0026230 A1	02-2003	Ibanez et al.	370/338
	G	US-2002/0080757 A1	06-2002	Narvanen et al.	370/338
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

## FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

## NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Network intelligence for GPRS; Depaoli, R.; Moiso, C.; Intelligent Network Workshop, 2001 IEEE; 6-9 May 2001 Page(s):4 - 8
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



## UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov



Bib Data Sheet

CONFIRMATION NO. 8170

<b>SERIAL NUMBER</b> 10/017,398	<b>FILING DATE</b> 12/18/2001 <b>RULE</b>	<b>CLASS</b> 370	<b>GROUP ART UNIT</b> <del>2601</del> 2662	<b>ATTORNEY DOCKET NO.</b> 005288.00014
<b>APPLICANTS</b> Senthil Sengodan, Burlington, MA; ** CONTINUING DATA <u>YES HXN</u> ** FOREIGN APPLICATIONS <u>NO HXN</u>				
<b>IF REQUIRED, FOREIGN FILING LICENSE GRANTED</b> ** 01/17/2002				
Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no 35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance Verified and Acknowledged <u>HXN</u> 8/31/2005 Examiner's Signature / Initials		<b>STATE OR COUNTRY</b> MA	<b>SHEETS DRAWING</b> 6	<b>TOTAL CLAIMS</b> 38 <b>INDEPENDENT CLAIMS</b> 7
<b>ADDRESS</b> 22907				
<b>TITLE</b> Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security				
<b>FILING FEE RECEIVED</b> 1400	<b>FEES:</b> Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	

**Search Notes**

Application/Control No.

10/017,398

Examiner

Hao X. Nguyen

Applicant(s)/Patent under  
Reexamination

SENGODAN, SENTHIL

Art Unit

2662

**SEARCHED**

Class	Subclass	Date	Examiner
370	395.3	9/8/2005	HXN
370	349	9/8/2005	HXN
370	338	9/8/2005	HXN

**INTERFERENCE SEARCHED**

Class	Subclass	Date	Examiner

**SEARCH NOTES  
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
Consulted with Hassan Kizou (SPE, Art Unit 2662) about classes/subclasses	9/8/2005	HXN
Performed text search and class/subclasses search using EAST.	9/8/2005	HXN
Consulted with John Pezzlo (Primary, Art Unit 2662) about references.	9/9/2005	HXN
Performed Inventoryship search.	9/14/2005	HXN

## ***Index of Claims***



Application/Control No.

10/017,398

**Examiner**

Hao X. Nguyen

**Applicant(s)/Patent under Reexamination**

SENGODAN, SENTHIL

<b>Art Unit</b>
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2662

✓	Rejected
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=	Allowed
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-	(Through numeral) Cancelled
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÷ **Restricted**

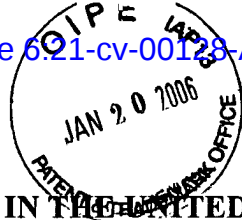
N	Non-Elected
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I	Interference
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<b>A</b>	<b>Appeal</b>
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O	Objected
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of:

**Senthil SENGODAN**

Serial No.: 10/017,398

Filed: December 18, 2001

For: METHOD AND APPARATUS FOR  
ADDRESS ALLOCATION IN GPRS  
NETWORKS THAT FACILITATES END-  
TO-END SECURITY

Atty. Docket No.: 005288.00014

Group Art Unit: 2662

Examiner: Nguyen, Hao X.

Confirmation No.: 8170

**AMENDMENT**

U.S. Patent and Trademark Office  
401 Dulany Street  
Alexandria, VA 22314

Sir:

In response to the Office Action mailed September 21, 2005, please amend the instant application as follows:

**Amendments to the Specification** begin on page 2 of this paper.

**Amendments to the Claims** are reflected in the Listing of Claims, which begins on page 4 of this paper.

**Amendments to the Drawings** begin on page 17 of this paper and include an attached replacement sheet.

**Remarks/Arguments** begin on page 18 of this paper.

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Reply to Office Action of September 21, 2005

**Amendments to the Specification:**

Please replace paragraph 22 at page 9 with the following rewritten paragraph:

| -- Figure 1 depicts a prior art private administrative domain and a public administrative domain that are separated by a NAT for illustrating a conventional NAT-based address assignment operation; --

Please replace paragraph 23 at page 9 with the following rewritten paragraph:

| -- Figure 2a depicts a prior art private administrative domain and a public administrative domain that are separated by an RSIP server for illustrating a conventional RSIP-based address assignment operation; --

Please replace paragraph 24 at page 10 with the following rewritten paragraph:

| -- Figure 2b depicts a prior art datagram within an RSIP-based system; --

Please replace paragraph 25 at page 10 with the following rewritten paragraph:

| -- Figure 3 shows prior art conventional generic GPRS protocol stacks for a mobile station (MS), base station subsystem (BSS), Serving GPRS Support Node (SGSN) and the Gateway GPRS Support Node (GGSN); --



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Please replace paragraph 26 at page 10 with the following rewritten paragraph:

-- Figure 4a-4d illustrate a prior art conventional PDP (Packet Data Protocol) context activation sequence within a GPRS network; --

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This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Original) A General Packet Radio System (GPRS) -based communications network comprising:
  - a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and
  - a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network,

the SGSN sending a Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address,

the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message, and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message,

the SGSN sending an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message, the Activate PDP Context Accept

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message containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

2. (Original) The GPRS-based communications network according to claim 1, wherein the mobile station receives the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

3. (Original) The GPRS-based communications network according to claim 1, wherein the information contained in the APN field of the Activate PDP Context Request message explicitly indicates one of a private network address and a public network address.

4. (Original) The GPRS-based communications network according to claim 1, wherein the information contained in the APN field of the Activation PDP Context Request message implicitly indicates one of a private network address and a public network address.

5. (Original) The GPRS-based communications network according to claim 1, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

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6. (Original) The GPRS-based communications network according to claim 1, wherein the GPRS-based communications network is a GPRS communications network.

7. (Original) The GPRS-based communications network according to claim 1, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

8. (Original) A method for assigning a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving GPRS Support Node (SGSN) of the GPRS-based communications network from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

9. (Original) The method according to claim 8, further comprising steps of:

sending a Create PDP Context Request message from the SGSN to a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network, the Create PDP

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Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

receiving a Create PDP Context Response message from the GGSN containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

10. (Original) The method according to claim 9, further comprising steps of:

receiving the Create PDP Context Request message from the SGSN at the GGSN;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

11. (Original) The method according to claim 8, further comprising steps of:

sending a Create PDP Context Request message from the SGSN to a Border Gateway (BG) of the GPRS-based communications network, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

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receiving a Create PDP Context Response message at the SGSN from the BG containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

12. (Original) The method according to claim 11, further comprising steps of:

receiving the Create PDP Context Request message at the BG;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

sending the Create PDP Context Response message to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

13. (Original) The method according to claim 12, further comprising steps of:

sending the Create PDP Context Request message from the SGSN to a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network;

sending the Create PDP Context Request message from the GGSN to the BG;

receiving the Create PDP Context Response message at the GGSN from the BG;

and

receiving the Create PDP Context Response message at the SGSN from the GGSN.

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14. (Original) The method according to claim 8, further comprising a step receiving at the mobile station the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

15. (Original) The method according to claim 8, wherein the information contained in the APN field of the Activate PDP Context Request message explicitly indicates one of a private network address and a public network address.

16. (Original) The method according to claim 8, wherein the information contained in the APN field of the Activate PDP Context Request message implicitly indicates one of a private network address and a public network address.

17. (Original) The method according to claim 8, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

18. (Original) The method according to claim 8, wherein the GPRS-based communications network is a GPRS communications network.

19. (Original) The method according to claim 8, wherein the GPRS-based

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communications network is a Universal Mobile Telecommunications System.

20. (Original) A General Packet Radio System (GPRS) -based communications network comprising:

a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

a Border Gateway (BG) of the GPRS-based communications network,

the SGSN sending a Create PDP Context Request message from the SGSN to the BG in response to the Activate PDP Protocol Context Request, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address,

the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message, and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message,

the SGSN sending an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message, the Activate PDP Context Accept message containing information assigning one of a private network address and a public network



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address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

21. (Currently Amended) The GPRS-based communications network according to claim 20, further comprising a Gateway GPRS Support Node (GGSN), and

wherein the SGSN sending the Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request,

wherein the GGSN sending the Create PDP Context Request message from the GGSN to the BG, and

wherein the BG sends the Create PDP Context Response message from the BG to the GGSN and the GGSN sends the Create PDP Context Response message to the SGSN.

22. (Original) The GPRS-based communications network according to claim 20, wherein the mobile station receives the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

23. (Original) The GPRS-based communications network according to claim 20, wherein the information contained in the APN field of the Activate PDP Context Request message explicitly indicates one of a private network address and a public network address.

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24. (Original) The GPRS-based communications network according to claim 20, wherein the information contained in the APN field of the Activation PDP Context Request message implicitly indicates one of a private network address and a public network address.

25. (Original) The GPRS-based communications network according to claim 20, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

26. (Original) The GPRS-based communications network according to claim 20, wherein the GPRS-based communications network is a GPRS communications network.

27. (Original) The GPRS-based communications network according to claim 20, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

28. (Original) A method for assigning a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

receiving a Create Packet Data Protocol (PDP) Context Request message from a Serving GPRS Support Node (SGSN) at Gateway GPRS Support Node (GGSN), the Create PDP Context Request Message having an APN field containing information relating to a request for one of a private network address and a public network address for a mobile station of the GPRS-based communications network;

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assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

29. (Original) The method according to claim 28, wherein the GPRS-based communications network is a GPRS communications network.

30. (Original) The method according to claim 28, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

31. (Original) A method for assigning a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

receiving a Create Packet Data Protocol (PDP) Context Request message from a Serving GPRS Support Node (SGSN) at Border Gateway (BG), the Create PDP Context Request Message having an APN field containing information relating to a request for one of a private network address and a public network address for a mobile station of the GPRS-based communications network;

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assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the BG to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

32. (Original) A method for requesting an assignment of a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

sending an Activate Packet Data Protocol (PDP) Context Request message to a Serving GPRS Support Node (SGSN) of the GPRS-based communications network from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

receiving at the mobile station an Activate PDP Context Accept message containing information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

33. (Original) The method according to claim 32, wherein the information contained in the APN field of the Activate PDP Context Request message explicitly indicates one of a private network address and a public network address.

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34. (Original) The method according to claim 32, wherein the information contained in the APN field of the Activate PDP Context Request message implicitly indicates one of a private network address and a public network address.

35. (Original) The method according to claim 32, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

36. (Original) The method according to claim 32, wherein the GPRS-based communications network is a GPRS communications network.

37. (Original) The method according to claim 32, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

Claim 38 (cancelled).

39. (New) A method for assigning a network address in a General Packet Radio System (GPRS)-based communications network, the method comprising:

receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving GPRS Support Node (SGSN) of the GPRS-based communications network from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing one or more parameters indicating a type of requested

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network address, wherein the type is one of a private network address and a public network address; and

sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address to the mobile station based on the one or more parameters indicating the type of requested network address contained in the APN field of the Activate PDP Context Request message.

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**Amendments to the Drawings:**

The attached sheets of drawings are formal drawings of Figs. 1-6 that replace the originally filed drawings. Additionally, Fig. 2b has been amended to identify the payload as element 209.

Attachment: Replacement Sheets

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### **REMARKS/ARGUMENTS**

The Office Action of September 21, 2005, has been carefully reviewed and these remarks are responsive thereto. Claim 21 has been amended. Claim 38 has been cancelled. Claim 39 has been added. No new matter has been added. Claims 1-37 and 39 remain pending after entry of the present amendment. Reconsideration and allowance of the instant application are respectfully requested.

#### ***Amendments to the Specification***

In response to the Examiner's objection, Applicant has amended the language used to describe figures 1-4d as "prior art."

#### ***Claim Objections***

Applicant has amended claim 21 to correct the typographical error identified by the Examiner. With respect to the objection regarding the placement of the first page of the claims, Applicant does not understand the objection. Applicant's copy of the application as filed shows that the claims begin on a new page, and are on pages 17-30, between the detailed description and the abstract. As such, Applicant requests further clarification and explanation in order to fix this informality if any such informality exists.

#### ***Drawings***

Per the Examiner's instructions, the Applicant has labeled the payload described in Fig. 2b as element 209. Applicant has further prepared formal drawings for all figures (i.e., Figs. 1, 2A, 2B & 3-6). Replacement sheets containing Figs. 1-6 and in compliance with 37 C.F.R. §1.121(d) are included herewith.

#### ***Claim Rejections Under 35 U.S.C. §102(e)***

Claim 38 stands rejected under 35 U.S.C. §102(e) as being anticipated by Takeda *et al.* (U.S. Patent Publ. No. 2001/0048686, hereinafter "Takeda"). Since claim 38 has been cancelled, this rejection is rendered moot.



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***Claim Rejections Under 35 U.S.C. §103(a)***

Claims 1-37 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand *et al.* (U.S. patent No. 6,687,252, hereinafter “Bertrand”) in view of Takeda. This rejection is respectfully traversed for the following reasons.

Independent claims 1, 8, 20, 28, 31 and 32 all relate to, *inter alia*, a GGSN assigning one of a private network address and a public network address to a mobile station based on information contained in an APN field of a Create PDP Context Request message. The information contained in the APN field is transmitted by the requesting mobile terminal and relates to a request for one of a private network address and a public network address. Neither Bertrand nor Takeda, either separately or in combination, teaches or suggests such a feature. While Bertrand and Takeda both disclose an APN field, neither one teaches or suggests that the assignment of a private or a public network address is based on information in the APN field related to the request by the mobile station.

In Bertrand, a GGSN uses an APN to deduce VPN and L2TP tunnel parameters. Col. 4, ll. 50-55, Col. 7, ll. 2-12. In addition, the APN contains authorization for the GPRS to set up a tunnel and the alternate routes to a corporate LAN. Col. 7, ll. 20-26. It should be noted that neither of these two functions relate to the actual allocation of an IP address to the mobile terminal. As such, Bertrand fails to teach or suggest that the assignment of an IP address (i.e., network address) is *based on information in the APN field of a Context Request message relating to a mobile terminal's request for one of a private network address and a public network address*. Bertrand's use of APN fields and its process for allocating IP addresses are entirely distinct. Additionally, Bertrand discloses that it is a Radius Server (RS) that actually finds (i.e., allocates) an IP address for the mobile terminal in response to a Radius Access Request message from the GGSN. Col. 5, ll. 16-31. Nowhere does Bertrand teach or suggest that information in the APN is either sent to or considered by the RS during the allocation process. Applicant's specification discloses that, in one example, the APN field in the Activate PDP Context Request message may indicate that a public IP address is desired. P. 12, ¶ 33. In consideration of such an indication in the APN field, the GGSN would return a message containing (i.e., assign) a public IP address to the mobile terminal. *Id.* Bertrand lacks any teaching or suggestion of a mobile terminal providing any such indication or information, much less a GGSN basing an IP address assignment on such and indication or information. Thus, there would be no motivation for

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Bertrand to use information stored in the APN fields (or even the APN fields themselves) in the actual allocation or assignment of IP addresses.

Even in view of Takeda, the combination would fail to teach or suggest the assignment of network addresses based on information in the APN field of a Context Request message relating to a mobile terminal's request for one of a private network address and a public network address. At best, Takeda discloses, on pp. 5-6, ¶ 91, the use of APNs to allow a gateway node to identify a communication network corresponding to the communication requested by a mobile terminal. As with Bertrand, Takeda does not teach or suggest any information in the APN that would be used during the actual IP address allocation process. In other words, an APN that merely identifies a gateway node would not have much to contribute in determining which IP address (or type of IP address) to assign a mobile terminal. Takeda fails to contradict this sentiment. Additionally in Takeda, it is the DHCP server that assigns the IP address to the mobile terminal, not the gateway node. P. 6, ¶ 95. Even so, Takeda does not teach or suggest that the DHCP, in allocating IP addresses, evaluates or receives any information contained in the APN relating to the mobile terminal's request for one of a public network address or a private network address. Neither Bertrand nor Takeda provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner suggested by the Applicant. The Office Action may not use Applicant's invention as a blueprint for combining two distinct components/features (e.g., allocation of IP addresses and APNs) found in Bertrand and Takeda. As such, claims 1, 8, 20, 28 and 32 are allowable for at least this reason.

Claims 2-7, 9-19, 21-27, 29, 30 and 33-37 are allowable for at least the same reasons as their respective base claims and further in view of the novel and non-obvious features recited therein. For example, claims 3, 15, 23 and 33 relate to, *inter alia*, information contained in the APN field of the Activate PDP Context Request message explicitly indicating one of a private network address and a public network address. As discussed on p. 13 of Applicant's specification, the inserted information (in the APN field) relating to whether a public or a private address assignment is desired can be an explicit indication, such as a particular bit (or bits) of the APN field being set, such as is claimed in claims 3, 15, 23 and 33. Neither Bertrand nor Takeda, separately or in combination, teaches or suggests such a feature. The Office Action even admits this deficiency of Bertrand. Instead, the Office Action alleges that ¶¶ 26, 89 and 90 of Takeda disclose an "APN field containing information relating to a request for one of a private network

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address and a public network address.” Even assuming the validity of such an allegation, merely containing information relating to a request is distinguishable from containing information in the APN field *explicitly indicating* one of a private network address and a public network address. Significantly, the cited passages only disclose an APN for identifying a gateway node. There is no teaching or suggestion that the APN field includes any explicit indicators of whether a private network address or a public network address is being requested. Claims 3, 15, 23 and 33 are thus allowable for this additional reason.

### ***Claim Rejections Under White et al.***

Claims 7, 19, 27, 30 and 37 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand in view of Takeda and further in view of White *et al.* (U.S. Patent Publ. No. 2003/0081578, hereinafter “White”). This rejection is respectfully traversed for the following reasons.

Claims 7, 19, 27, 30 and 37 all relate to a GPRS-based communications network that is a Universal Mobile Telecommunications System. The Office Action, on page 23, concedes that Bertrand does not disclose such a feature. Takeda also fails to teach or suggest a GPRS-based network that is a Universal Mobile Telecommunications System. White is further unable to cure the deficiencies of Bertrand and Takeda in view of the 37 C.F.R. §1.131 Declaration (131 Declaration) filed herewith showing Applicant’s conception and diligence prior to White’s date of filing. As such, claims 7, 19, 27, 30 and 37 are allowable for this additional reason.

### ***New Claim***

New claim 39 recites, *inter alia*, “the Activate PDP Context Request message having an APN field containing one or more parameters indicating a type of requested network address, wherein the type is one of a private network address and a public network address.” Neither Bertrand nor Takeda, separately or in combination, teaches or suggests such a feature. Although both Bertrand and Takeda disclose APNs, neither teaches or suggests that the APN contains a parameter indicating a type of requested network address. In fact, nowhere does Bertrand or Takeda disclose that a mobile terminal can request a specific type (i.e., private or public) of network address. Claim 39 is thus allowable for at least this reason.

### **CONCLUSION**

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All rejections having been addressed, Applicants respectfully submit that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. However, if for any reason the Examiner believes the application is not in condition for allowance or there are any questions, the Examiner is requested to contact the undersigned at (202) 824-3153.

Respectfully submitted,

BANNER & WITCOFF, LTD.

Dated: Jan. 20, 2006

By:   
Ross A. Dannenberg, Reg. No. 49,024

1001 G Street, N.W.  
Washington, D.C. 20001-4597  
Tel: (202) 824-3000  
Fax: (202) 824-3001

RAD/CAM

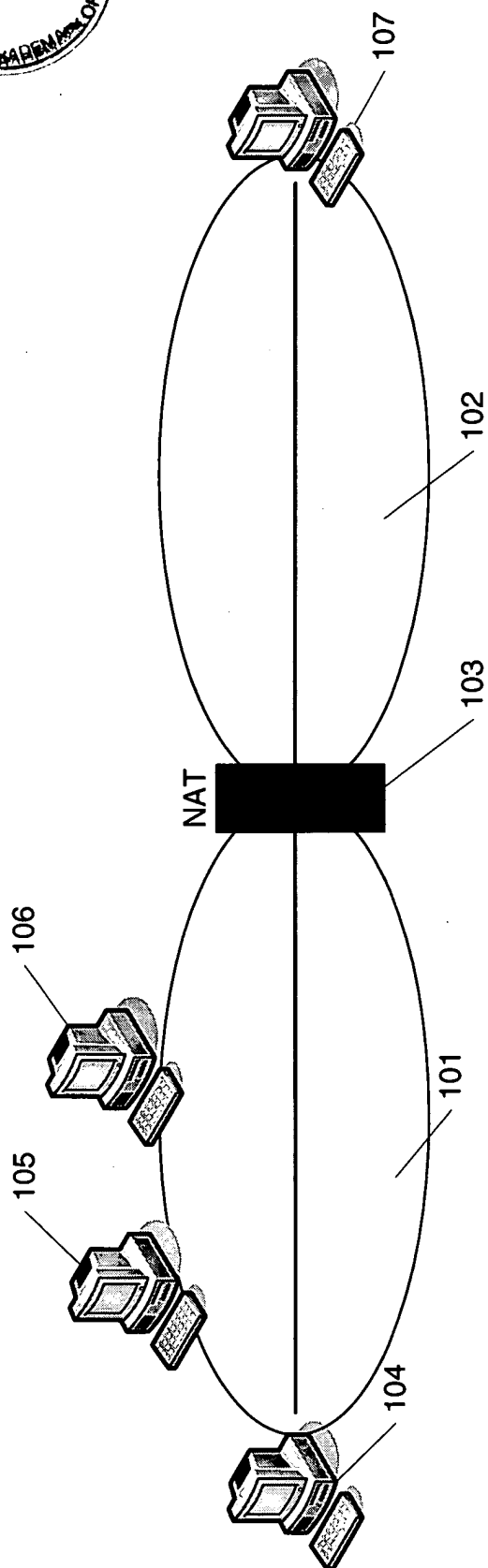


FIG. 1  
(PRIOR ART)

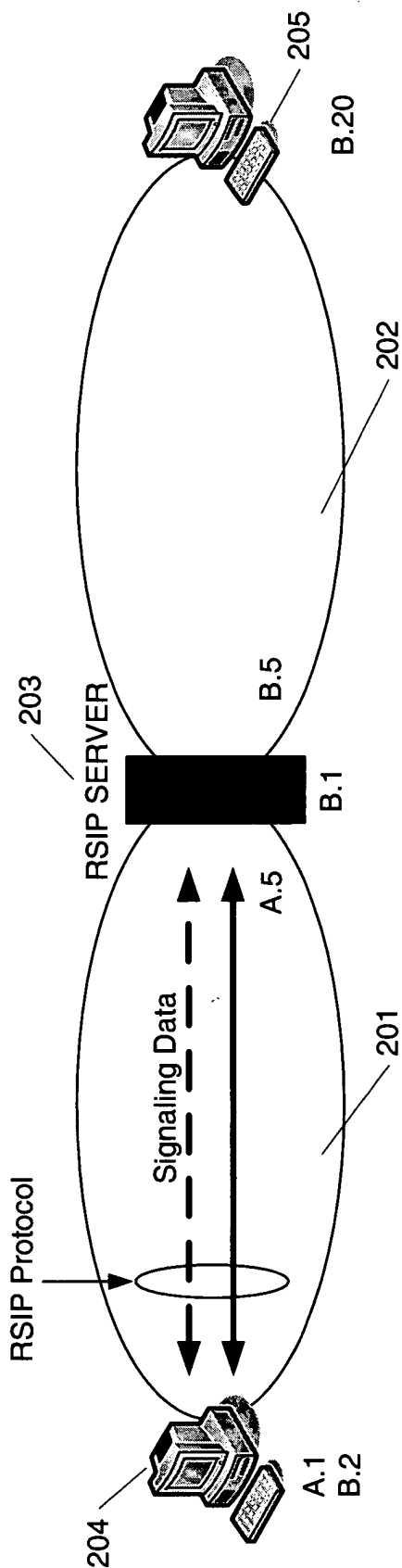


FIG. 2A  
(PRIOR ART)

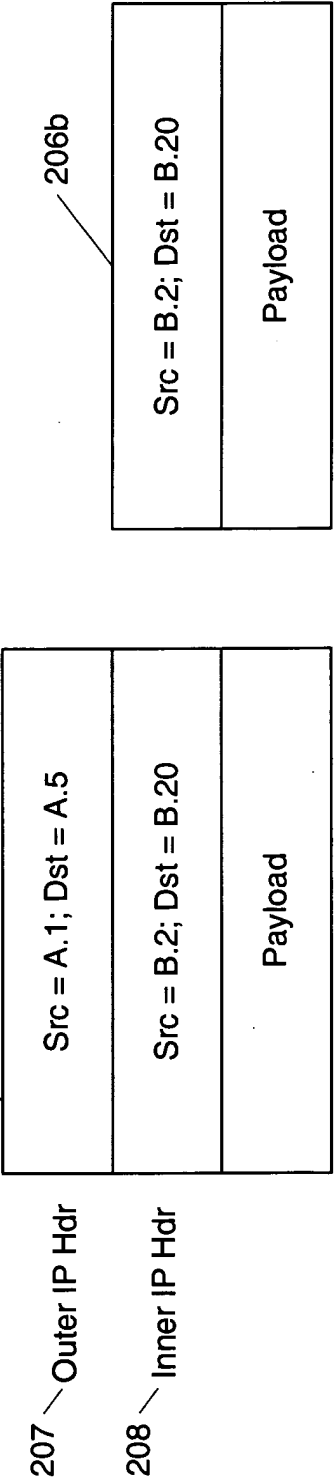


FIG. 2B  
(PRIOR ART)

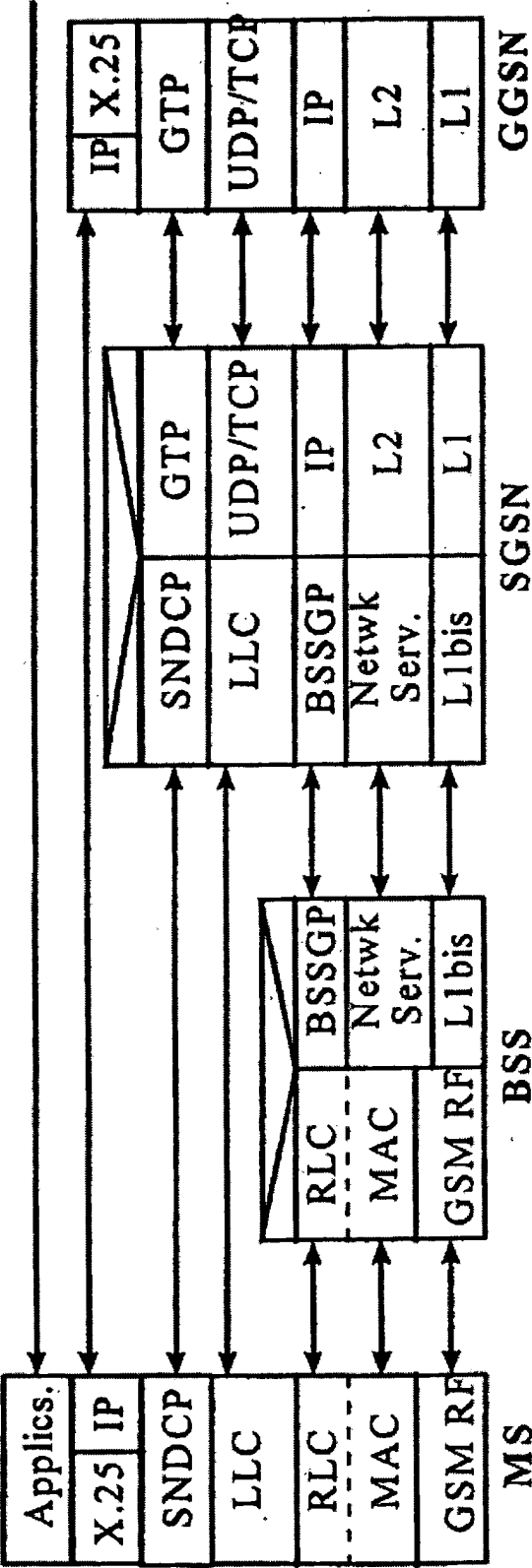


FIG. 3  
(PRIOR ART)



FIG. 4A

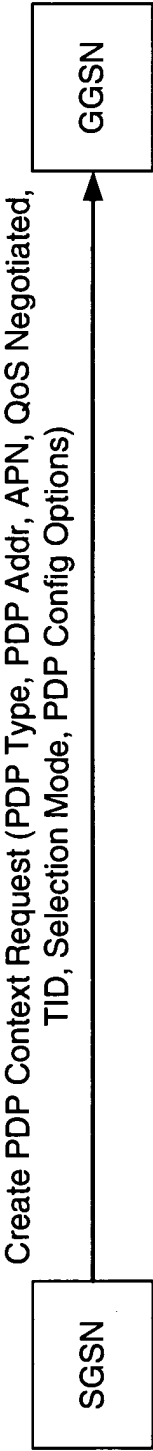


FIG. 4B

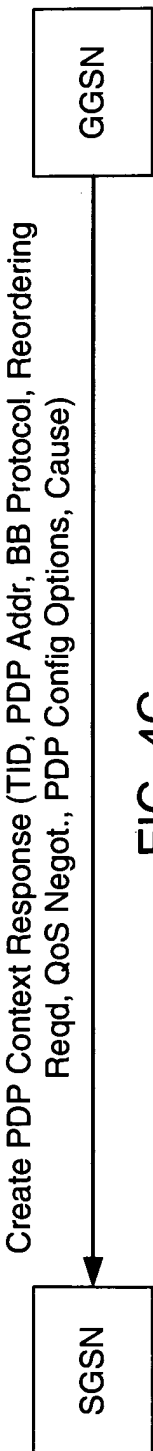


FIG. 4C

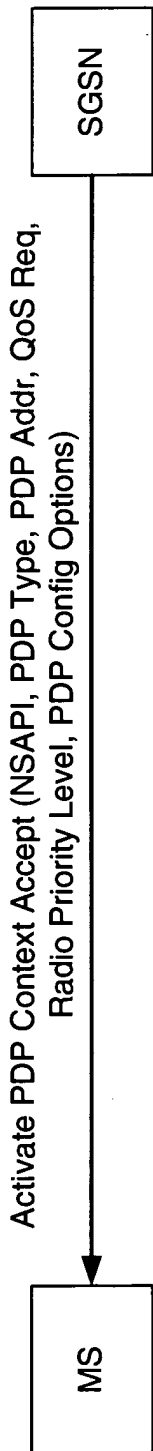


FIG. 4D



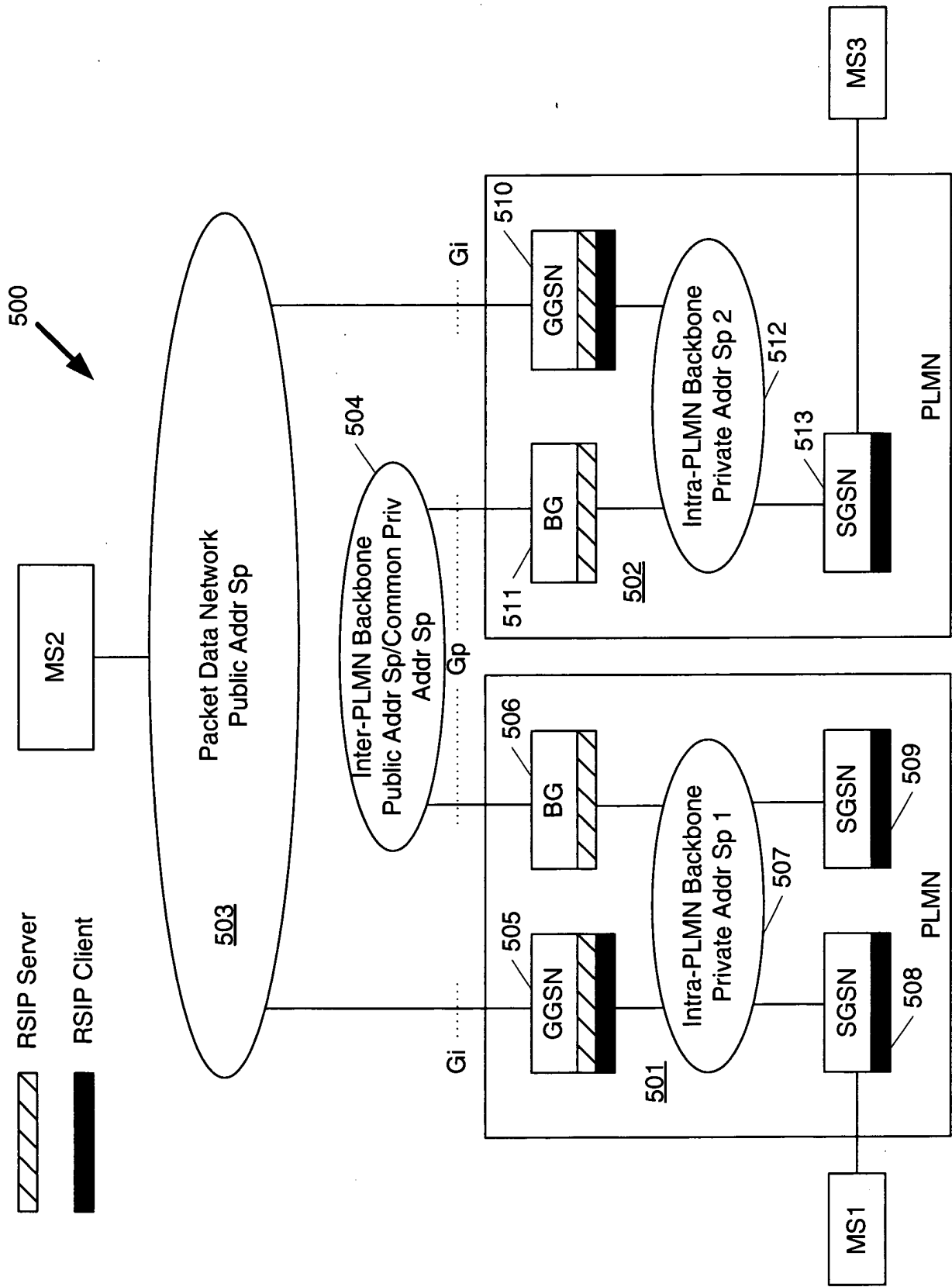


FIG. 5

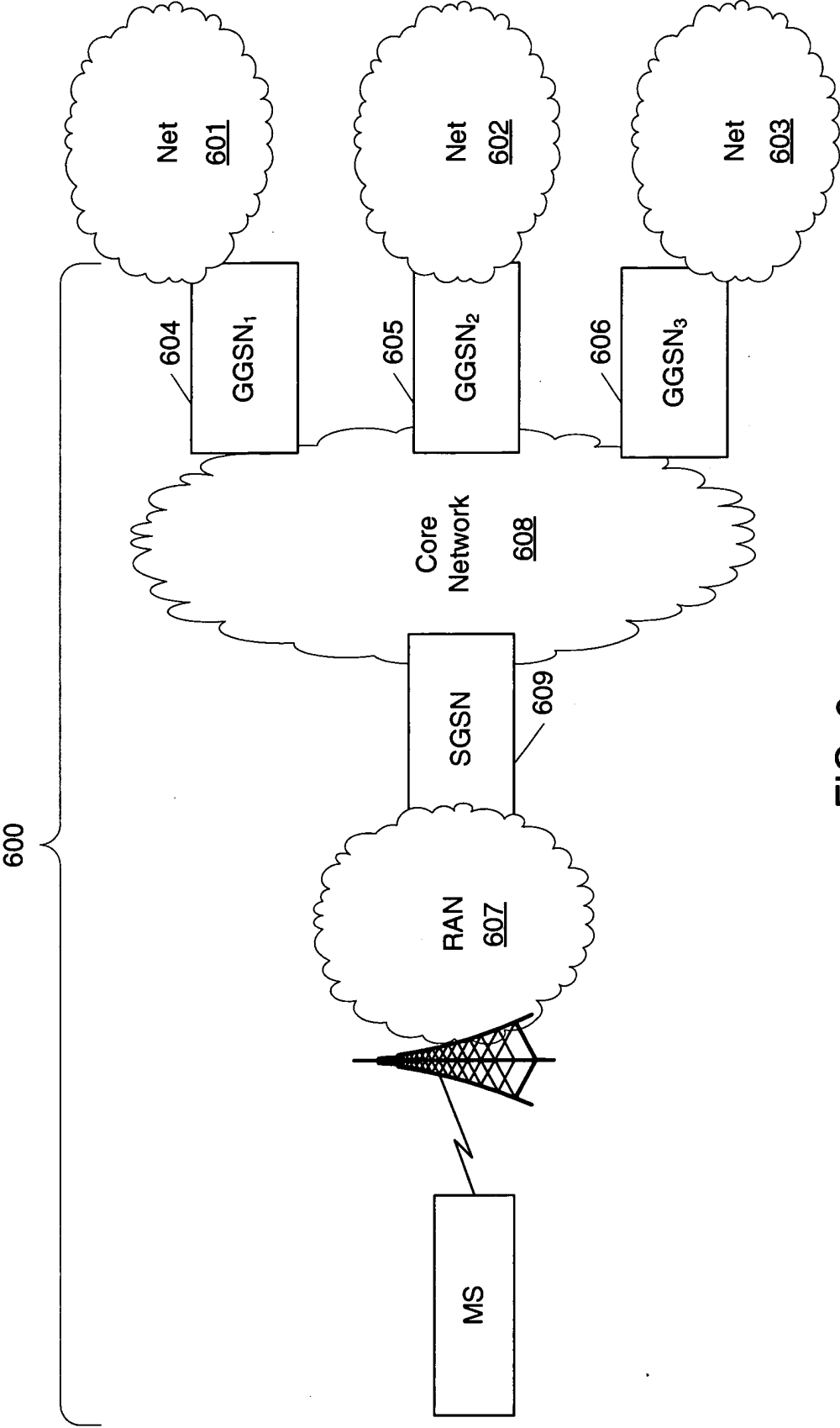


FIG. 6

Declaration Under 37 C.F.R. § 1.131  
Appended to Amendment  
Reply to Office Action of September 21, 2003  
Page 1 of 3



**BEST AVAILABLE COPY**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of:

**Senthil SENGODAN**

Serial No.: 10/017,398

Filed: December 18, 2001

For: **METHOD AND APPARATUS FOR  
ADDRESS ALLOCATION IN GPRS  
NETWORKS THAT FACILITATES  
END-TO-END SECURITY**

Atty. Docket No.: 005288.00014

Group Art Unit: 2662

Examiner: Nguyen, Hao X.

Confirmation No.: 8170

**DECLARATION UNDER 37 C.F.R. § 1.131**

U.S. Patent and Trademark Office  
Commissioner for Patents

Sir:

I, Senthil Sengodan, hereby declare, unless otherwise excepted, that:

- 1) I am named as the sole inventor of the above-identified patent application;
- 2) I am presently employed by Nokia Corporation (Nokia), and was employed by Nokia during conception and development of the above-identified application.
- 3) Nokia is the assignee of the above-identified application.
- 4) Prior to October 26, 2001, ("the critical date") the actual filing date of U.S. Publ. No. US 2003/0081578 A1, I conceived of the invention recited in the pending claims of the above-identified application.
- 5) Conception is evidenced by the disclosure document entitled "A Method and Apparatus for Address Allocation in GPRS Networks that facilitates end-to-end-security" ("GPRS1") prepared by Senthil Sengodan (dates redacted), a copy which is attached as Exhibit A. This document was prepared prior to the critical date. The date(s) redacted from Exhibit A is/are prior to the critical date.
- 6) The GPRS1 document specifically evidences conception at least of independent claims 1, 8, 20, 28, 31, 32 and 39 at least at pages 4-10, among other places.

Declaration Under 37 C.F.R. § 1.131  
Appended to Amendment  
Reply to Office Action of September 21, 2005  
Page 2 of 3

- 7) The GPRS1 document was subsequently forwarded to my patent attorney, Mr. Bradley C. Wright of the law firm Banner & Witcoff, Ltd., for preparation of an application.
- 8) On October 18, 2001, my employer forwarded my comments and revisions to a draft application to Mr. Joseph P. Curtin (also an attorney with Banner & Witcoff, Ltd.). The letter communicating the comments and revisions is attached as Exhibit B.
- 9) On October 31, 2001, another draft of the patent application was forwarded to my employer for review. The e-mail forwarding the additional draft is attached as Exhibit C.
- 10) On November 26, 2001, my employer forwarded additional information that I provided on November 21, 2001, to Mr. Wright and Mr. Curtin. The e-mail string communicating the additional information is attached as Exhibit D.
- 11) In response to the comments sent November 26, 2001, Mr. Wright forwarded a fourth draft of the application from Mr. Curtin to my employer for review. We subsequently approved the draft and faxed a signed Declaration and a signed Assignment for filing on December 18, 2001. The fax forwarding the signed documents is attached as Exhibit E.
- 12) On December 18, 2001, the above-captioned patent application was filed in the U.S. Patent and Trademark Office.
- 13) The invention disclosure (Exhibit A) evidences conception, and the preparation and revisions to draft patent applications from a time prior to the Critical Date through the filing of the Application demonstrate diligence from before the Critical Date until the

Declaration Under 37 C.F.R. § 1.131  
Appended to Amendment  
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Page 3 of 3

filing of the above-captioned patent application and the constructive reduction to practice of our invention.

14) All acts referred to in this Declaration were performed either in the United States, or in a WTO member country.

15) The attached Exhibits have not been altered since they were originally submitted to the Patent Committee or otherwise prepared or communicated and any marginalia on the exhibits was contemporaneously written upon receipt of the exhibit in question; and

16) I declare under penalty of perjury under the law of the United States of America that statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,

Senthil Sengodan  
Senthil Sengodan

December 22, 2005  
Date

**NOKIA****CONFIDENTIAL****INVENTION REPORT**

Title of invention: <b>A Method and Apparatus for Address Allocation in GPRS Networks that facilitates end-to-end security</b>		<b>INVENTION REPORT RECEIVED</b> Code: _____ Patent Committee: _____	
<b>THE DESCRIPTION OF THE INVENTION MUST BE ATTACHED</b>		Place: _____	Date: _____
		Signature: _____	
Inventor's name, employee number, title and nationality: *) <b>Senthil Sengodan</b> <b>Assistant Research Manager</b> <b>India</b>	Home Address: *) <b>6 Westgate Dr, #205</b> <b>Woburn, MA 01803</b>	Business Unit and cost centre:	
Line Manager(s): <b>Raj Bansal</b>			
Project : *)		Project Manager:	
Office address: *) <b>5 Wayside Road, Burlington, MA 01803, USA</b>			
Phone: *) <b>+1-781-993-3789</b>		Fax: *) <b>+1-781-993-1907</b>	
The invention becomes public on:			
I am/ We are the sole/ and original inventor(s) of this invention.  The company may, by virtue of applicable legislation, be entitled to full or partial rights to the invention. I/ We acknowledge my/ our obligation to sign as inventor(s) all documents that may be required for protecting the invention in different countries.  <b>Applicable to inventions made by inventors employed in FI, DK, DE and SE only.</b> Unless the inventor requests the Invention Report to be responded to within four (4) months from the date this Invention Report is received or such other period as the mandatory provisions of the applicable local law may otherwise require, the inventor consents to the right of the employer to use a reasonable period of time for the evaluation of the invention. A reasonable period of time may exceed four (4) months. <input type="checkbox"/> I/ We request that the Invention Report be responded to within four (4) months.			
Date: Signature(s) of Inventor(s):			

\*) See the Instructions

I have read and understood the invention described in this Invention Report

 Date:  
 Signature of Manager

**NOKIA**

**CONFIDENTIAL**

## **INSTRUCTIONS FOR COMPLETING THE INVENTION REPORT**

This Invention Report form is used in cases where an invention has been made by an employee of the Company. This Invention Report is confidential. Only the Patent Department may make copies of signed Invention Reports in order to request opinions or reply to the inventor(s).

The inventor completes the Invention Report and the description of the invention. The inventor does not fill in the 'Invention Report received' field. This field is filled in by the Patent Department. The Invention Report must have the names of all the inventors and their home addresses. If there is not enough space for all the names, addresses etc, please write them on a separate attachment. The first mentioned inventor is assumed to be the contact person in matters concerning the Invention Report. In the fields of office address, phone and fax, please fill in the contact person's information. Fill in the project field, if the invention is made in a project. The original Invention Report is signed by all inventors. Each page of the original Invention Report is signed by a Manager. In case it is difficult to obtain Manager's signature your Patent Department will take care of it.

It is suggested that the Invention Report and the description of the invention should be filled in as thoroughly as possible. If drawings or other kind of information cannot be attached to this form, they should be delivered separately.

The signed Invention Report is given directly to the local or business unit's Patent Department. Invention Report should also be sent by E-mail to the Patent Department. The Patent Engineer will inform the inventor of receiving the Invention Report. The Patent Engineer will obtain any expert opinions needed to properly evaluate the invention, will procure the Company's decision and inform the inventor accordingly.

*I have read and understood the invention described in this Invention Report*

Date:  
Signature of Manager

**NOKIA****CONFIDENTIAL****DESCRIPTION OF THE INVENTION**

Please, describe your invention in the following order. You can enclose the drawings on a separate document.

**1. Field and background of the invention****NAT and RSIP**

IPv4 is the version of IP (Internet Protocol) that is deployed in today's networks – both enterprise networks as well as the public Internet. One of the limitations of IPv4 is its limited address space. In order to conserve addresses, enterprises and other administrative domains have resorted to the use of private addresses. Private addresses are those where the IP address falls in the range: [10.0.0.0 – 10.255.255.255], or [172.16.0.0 – 172.31.255.255], or [192.168.0.0 – 192.168.255.255]. Private addresses that are assigned by an administrative entity within an administrative domain (AD) have relevance only within the AD, and such addresses must not be visible outside the AD. The advantage of this approach is that different ADs may assign the same private IP address to hosts within their respective ADs, without any concern of conflict. When a host that is assigned a private address wishes to communicate with a host that is outside its AD, the use of a Network Address Translator (NAT) is warranted. A NAT transforms the private IP address (and possibly certain other fields) to a public IP address, prior to sending the IP datagram outside its domain.

This approach of using private addresses within ADs, and the use of NATs at the edges of the ADs, has been widely adopted and deployed within enterprises. However, there are two major drawbacks that such an approach faces:

1. Such an approach breaks the end-to-end security model, and
2. Certain applications cannot work in the presence of a NAT, unless remedial measures - such as the inclusion of an application gateway (proxy) - are taken.

Figure 1 illustrates a typical scenario involving NATs.

*I have read and understood the invention described in this Invention Report*

3

Date:

Signature of Manager



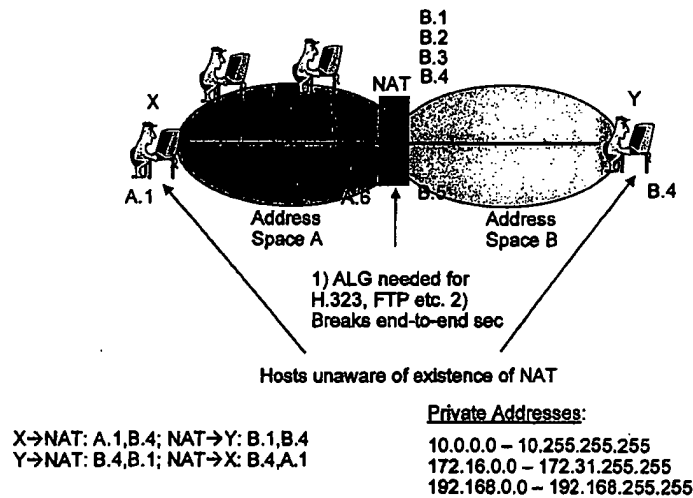
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Figure 1: Illustrating NATs

In order to overcome the disadvantages that face NATs, a mechanism termed Realm Specific IP (RSIP). RSIP has been proposed within the IETF and has gained significant support. In RSIP, a host (RSIP client) that needs to be assigned an IP address indicates to the server (RSIP server) that is responsible for assigning IP address, whether the IP address is needed to communicate with hosts within the AD or outside the AD. Based on this information, the RSIP server assigns either a private IP address or a public IP address to the host. It is seen that when a private IP address is assigned to a host, the IP datagram does not leave the AD. When an IP datagram does leave an AD, the address that is assigned to the transmitting host is a public IP address. Thus, the RSIP protocol makes the use of NATs unnecessary, thereby avoiding the drawbacks involving NATs. Figure 2 illustrates the usage of RSIP.

To summarize the discussion thus far, there are generally two broad approaches taken regarding the assignment of IP addresses to hosts within an AD:

1. Assign private addresses to hosts, and when the host needs to communicate with another host that is outside the private domain, make use of Network Address Translators (NATs).
2. Determine whether the host needs to communicate with another host within the same AD or outside the AD, prior to assigning an IP address to it. Assign a private address to a host when it communicates with another host within the same AD. Otherwise, assign a public address to the host. The protocol between the host and the address assigning server is the RSIP protocol.

*I have read and understood the invention described in this Invention Report*

4

Date:  
Signature of Manager

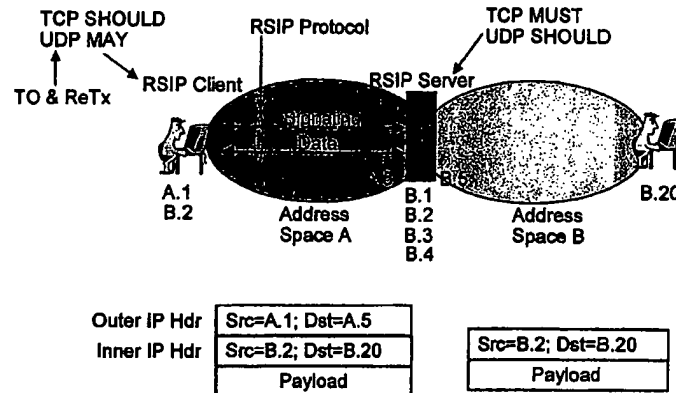
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Figure 2: Illustrating RSIP

**IP Address Assignment in GPRS Networks**

In the case of GPRS networks, a Mobile Station (MS) is assigned an IP address by the General GPRS Support Node (GGSN). Today, such an IP address is an IPv4 address. The protocol that is used for address assignment is specific to GPRS networks, and is termed PDP Context Activation. PDP (Packet Data Protocol) is a term that is used within GPRS networks to refer to IP addresses, X.25 addresses etc. Since we are concerned about IPv4 addresses, the term PDP is synonymous with IPv4 address for this discussion. Figure 3 shows a generic GPRS protocol stack, where the IP address on the MS may be seen. Figure 4 illustrates the PDP context activation procedure within GPRS networks. An Administrative Domain (AD) within GPRS networks (and cellular networks in general) is termed a PLMN (Public Land Mobile Network).

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Date:  
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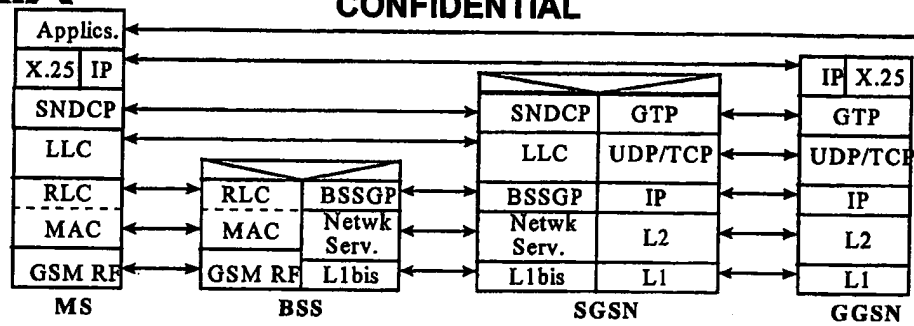
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Figure 3: GPRS Protocol Stack

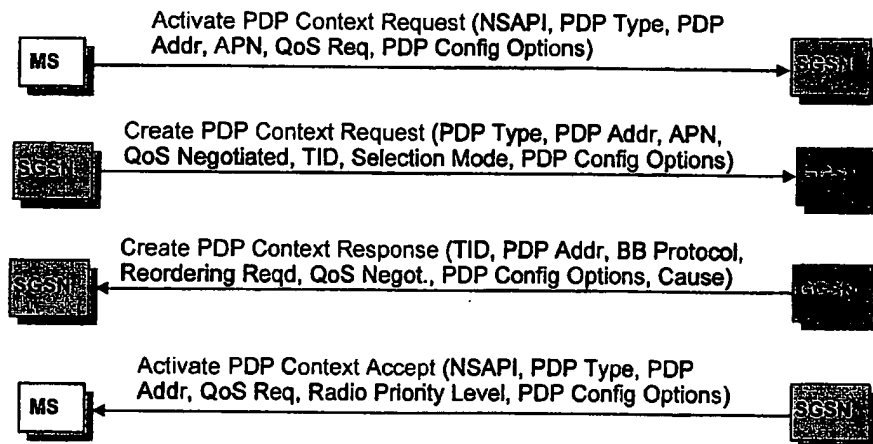


Figure 4: PDP Context Activation

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Date:  
Signature of Manager

**NOKIA****CONFIDENTIAL****2. A summary of the invention**

When IPv4 addresses are assigned to MSs in a GPRS network, one needs to be concerned about conserving such addresses, while maintaining end-to-end security and application friendliness at the same time. In order to achieve this, this we propose two methods:

1. Use of the RSIP protocol within GPRS networks. We describe the GPRS functional entities where the RSIP client and the RSIP server need to be implemented.
2. Use of the existing GPRS address assignment mechanism (i.e., PDP context activation procedure) with minor modifications, so that a functionality similar to RSIP is achieved. Specifically, we propose the use of the *Access Point Name* (APN) field within the *Activate PDP Context Request* message to convey to the GGSN, whether a private or public IP address needs to be assigned to the MS.

**3. Describe the problem which the invention overcomes**

The problem that the invention solves is:

- To date, we know of no clear mechanism/procedure for IPv4 address assignment to a MS by a GGSN within GPRS networks, which has the benefits of conserving IPv4 addresses while at the same time maintaining end-to-end security and being application friendly.

**4. How was the problem solved earlier?**

The GPRS standard itself does not specify whether private or public IP addresses are assigned to MSs, since that is not a standardization issue. It is not a standardization issue when one relies on the fact that NATs will be used at the PLMN boundaries, in the presence of private IP addresses. In other words, I believe that current GPRS deployments rely on the use of NATs at the GGSN when private addresses are assigned to the MSs. While this solves the problem of conserving IPv4 addresses, as we saw earlier, it does not provide end-to-end security or application friendliness.

**5. How does the invention improve earlier solutions? Advantages and disadvantages of the invention?**

I believe that current GPRS implementations using IPv4 addresses rely on the use of NATs when private addresses are assigned to the MS. The disadvantages of the use of NATs with regard to end-to-end security and application friendliness is known. Consequently, the current solutions suffer from this drawback. The proposed solution(s) avoid this drawback since they are based on the principle of RSIP.

**6. Brief description of the drawings (Please enclose drawings and figures of the invention on a separate document)***Drawings Relevant to Proposal 1*

Figure 5 shows the location of the RSIP client and RSIP server functionalities within the GPRS functional elements, so that the RSIP protocol may be used for IPv4 address assignment. As seen in the figure, RSIP client functionality is needed at SGSNs and GGSNs, but is not needed either at the MS or at BGs.

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Similarly, RSIP server functionality is needed at GGSNs and BGs, but is not needed either at the MS or at SGSNs.

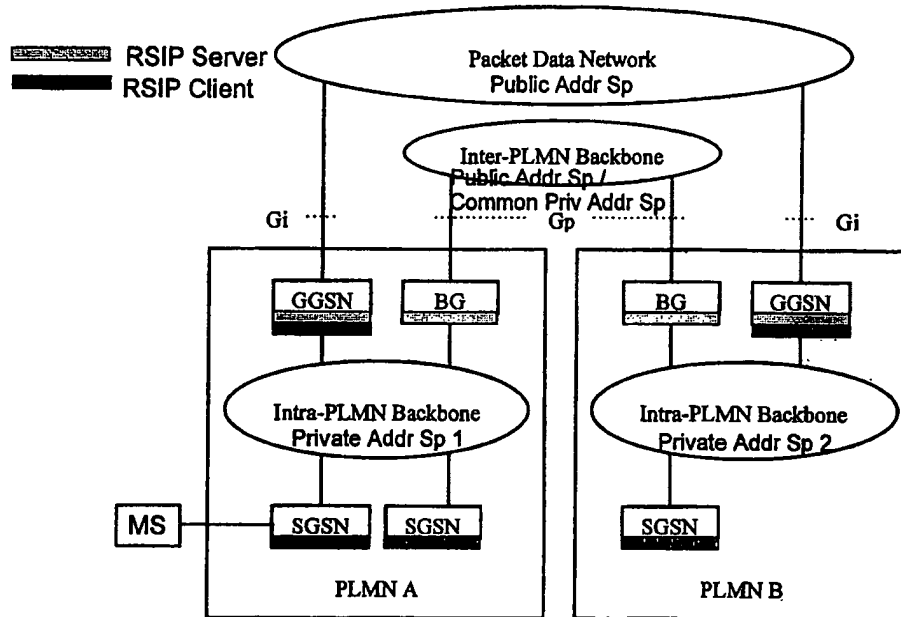


Figure 5: RSIP Client and Server Locations

## 7. A more detailed description of the invention (if known at the moment)

### Detailed Description of Proposal 1

As seen in Figure 4, during PDP context activation (which is the procedure for IPv4 address assignment for the MS), one of the fields in the *Activate PDP Context Request* message sent from the MS to the SGSN is the *Access Point Name (APN)* field. The APN field is used by the MS to indicate a preference of access points or networks for data transfer. The SGSN uses the APN field to choose a suitable GGSN to send the *Create PDP Context Request* message. The *Create PDP Context Request* message sent from the SGSN to the GGSN transparently contains the APN field that was used within the *Activate PDP Context Request* message sent from the MS to the SGSN.

This is illustrated in Figure 5, which shows three GGSNs connected to the Core Network associated with an SGSN. Depending on the value of the APN field in the *Activate PDP Context Request* message sent

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from the MS to the SGSN, the SGSN chooses a suitable GGSN (one of GGSN<sub>1</sub>, GGSN<sub>2</sub> or GGSN<sub>3</sub>). The *Create PDP Context Request* message is then sent from the SGSN to the chosen GGSN.

Proposal 1 in this document is that the MS indicates its preference of a private or a public address known to the GGSN via the APN field. The GGSN uses this APN field to assign either a private address or a public address to the MS.

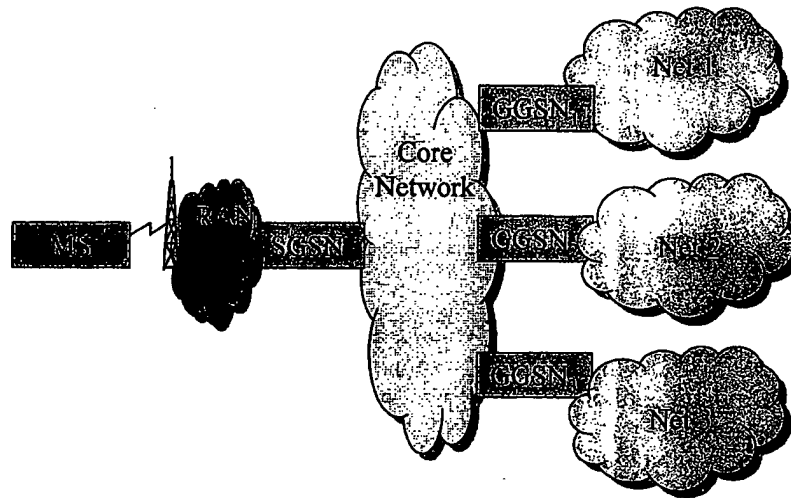


Figure 6: Illustrating the use of APN to choose GGSNs

### Detailed Description of Proposal 2

Several scenarios can be discussed to reason out the placement of the RSIP client and server functionalities as shown in Figure 5. Some of these are now discussed.

### **Scenarios without mobility**

Consider the case of the outer IP header between an SGSN and GGSN of the same PLMN, for instance, that in PLMN A of Figure 5. In this case, private addresses can be used always, and hence, for this scenario, we do not need RSIP client or server functionality within any GPRS element.

Consider the case of the outer IP header between an SGSN and GGSN, where the SGSN and GGSN belong to different PLMNs. For instance, consider the case in Figure 5, where the SGSN belongs to PLMN A while the GGSN belongs to PLMN B. In this case, two pairs of RSIP client server functionality come into play: (1) RSIP client at SGSN A and RSIP server at BG A, and (2) RSIP client at GGSN B and RSIP server at BG B.

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For the case of the inner IP header, the RSIP client is at the SGSN while the RSIP server is at the GGSN. This is irrespective of the case whether the GGSN and the SGSN are within the same PLMN or in different PLMNs.

### ***Scenarios with mobility***

Consider the case where a MS that is associated with SGSN B moves to a different location that is associated with SGSN A. Let the GGSN be GGSN B, and let us discuss the outer IP header. In this case, two pairs of RSIP client-server functionality come into play: (1) RSIP client at SGSN A and RSIP server at BG A, and (2) RSIP client at GGSN B and RSIP server at BG B. This is identical to the case without mobility since the outer IP header is being discussed.

For this same scenario, let us now discuss the inner IP header. In this case, three pairs of RSIP client/server functionalities come into play: (1) RSIP client at SGSN B and RSIP server at GGSN B (2) RSIP client at GGSN B and RSIP server at BG B, and (3) RSIP client at SGSN A and RSIP server at GGSN A.

Hence, we see that for all the scenarios discussed, the presence of RSIP client and server functionalities as illustrated in Figure 5 serves the purpose.

**8. Explain, how the invention is/can be implemented. Which would be the best mode of implementation?**

**9. Explain how we can recognise if a competitor is using the same product/feature?**

**10. Is it planned to use the invention in a Nokia product? If so, when and in which product? Is the invention standard related?**

### **11. Abbreviations**

AD	Administrative Domain
BG	Border Gateway
GPRS	General Purpose Radio System
IP	Internet Protocol
NAT	Network Address Translator
PDP	Packet Data Protocol
PLMN	Public Land Mobile Network
RSIP	Realm Specific IP
SGSN	Serving GPRS Support Node

### **12. Any further comments**

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A list of references is as follows:

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**OCT 18 2001**

Nokia Inc.  
Wayne DeMello  
Intellectual Property Rights Dept.  
Five Wayside Road  
Burlington, MA 01803, USA

This matter is NOT in MDC.  
Please advise if we need  
to update our database.

**BANNER & WITCOFF, LTD.**

**MEMO**

**DATE:** 10/18/01

**TO:** Banner & Witcoff

**From:** Wayne DeMello  
Voice: (781) 993-4836  
Fax: (781) 993-1981

**RE:** Re: more inventor comments on 17391

**# of Pages:** 9

To:  
Joe Curtin

**Memo:**

Joe,

Please contact Senthil directly with any questions on these comments. *Only pages with comments are included*

Best Regards,

*Wayne*

Wayne DeMello



For  
File



**From:** Patent-Agency Banner-Witcoff (EXT-RES/Washington)

**To:** DeMello Wayne (Nokia-IPR/Boston)

**Cc:**

**Subject:** NC17391 (B&W 5288.00014)

**Sent:** 10/31/01 7:12 PM

**Importance:** Normal

Mr. DeMello:

Due to an oversight on our part, we believed that we had sent you a third draft of the above application on October 19, 2001. We apologize for the inconvenience and attach a copy of the third draft application and figures for the inventors review.

Many thanks,

Pam Pease  
Assistant to Brad Wright  
Banner & Witcoff, Ltd.

IMAN\_WDC\_410538\_3.DOC IMAN\_WDC\_424848\_1.PDF

**From:** Pamela Beth Pease  
**To:** Curtin, Joseph  
**Date:** 11/26/01 3:08PM  
**Subject:** Email from nokia re: 5288.00014 NC17391

Hi Joe:

We just received the below email from nokia. The document can also be found in imanage under the client/matter no. Please print this out and place it in the file.

Thanks

—  
**From:** DeMello Wayne (Nokia-IPR/Boston)  
**To:** Patent-Agency Banner-Witcoff (EXT-RES/Washington)  
**Cc:**

**Subject:** FW: NC17391 additional material  
**Sent:** 11/26/01 6:08 PM  
**Importance:** Normal  
Brad,

Here is additional material from the inventor. Please let me know when to expect the next draft.

BR,  
Wayne

—Original Message—

**From:** Sengodan Senthil (NRC/Boston)  
**Sent:** Wednesday, November 21, 2001 5:48 PM  
**To:** DeMello Wayne (Nokia-IPR/Boston)  
**Subject:** NC17391 additional material

Hello Wayne,

GPRSAddr-mod.doc

I promised to provide Joe Curtin some additional material on NC17391. I've included the original paper that I had forwarded with some additional material included within that. Specifically, two illustrations have been added for Proposal 1 under Section 4. These illustrate the functioning of one of the approaches proposed in the invention, and the reasoning behind the placement of the RSIP client and server functionality at certain network entities (like SGSN, GGSN and BG). Please pass it on to Joe. Thanks & hope you have a good thanksgiving holiday!

- Senthil

**CC:** Wright, Bradley

12/18/01 TUE 12:45 FAX 781-993 4939

NOKIA TELECOMMUNICATIONS

00

**NOKIA**5 Wayside Road, Burlington, MA 01803  
Telephone 781-993-3900

# Fax

**To:** Joe Curtin / Banner & Witcoff **From:** Patricia Griffin

---

**Fax:** 202-508-9299 **Pages:** 5 including Cover Page

---

**Phone:** 202-608-9155 **Date:** 12/18/2001

---

**Re:** NC 17391 Declaration and Assignment **CC:**

---

☒ **Urgent**    ☐ **For Review**    ☐ **Please Comment**    ☐ **Please Reply**    ☐ **Please Recycle**

---

**• Comments:**

Hi Joe,

Faxing over the signed Declaration and Assignment for NC 17391, please file this today.

Thank you,

Pat

**Patricia Griffin**  
Patent Assistant to Nokia House Boston  
5 Wayside Road  
Burlington, Massachusetts 01821  
781-993-3822 Office  
781-993-1981 Fax  
781-910-6206 Mobile  
[patricia.griffin@nokia.com](mailto:patricia.griffin@nokia.com)

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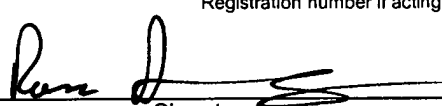
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PTO/SB/22 (12-01)

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<b>PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)</b> <b>FY 2005</b> <b>(fees effective on or after December 8, 2004)</b>		Docket Number (Optional) 005288.00014	
Application Number 10/017,398		Filed December 18, 2001	
For METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS NETWORKS THAT FACILITATES END-TO-END SECURITY			
Art Unit 2662		Examiner Hao X. Nguyen	
This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application. The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):			
	<b>Fee</b>	<b>Small Entity Fee</b>	
<input checked="" type="checkbox"/> One month (37 CFR 1.17(a)(1))	\$120	\$60	\$120
<input type="checkbox"/> Two months (37 CFR 1.17(a)(2))	\$450	\$225	\$
<input type="checkbox"/> Three months (37 CFR 1.17(a)(3))	\$1020	\$510	\$
<input type="checkbox"/> Four months (37 CFR 1.17(a)(4))	\$1590	\$795	\$
<input type="checkbox"/> Five months (37 CFR 1.17(a)(5))	\$2160	\$1080	\$
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. <input type="checkbox"/> A check in the amount of the fee is enclosed. <input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached. <input type="checkbox"/> The Director has already been authorized to charge fees in this application to a Deposit Account. <input checked="" type="checkbox"/> The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number <u>19-0733</u> . I have enclosed a duplicate copy of this sheet.			
<b>WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</b>			
I am the <input type="checkbox"/> applicant/inventor. <input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71 Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96). <input checked="" type="checkbox"/> attorney or agent of record. Registration Number <u>49,024</u> <input type="checkbox"/> attorney or agent under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____			
 Signature		January 20, 2006 Date	
Ross A. Dannenberg Typed or printed name		(202) 824-3000 Telephone Number	
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.			
<input checked="" type="checkbox"/> Total of 2 forms are submitted.			

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

01/23/2006 HALI11

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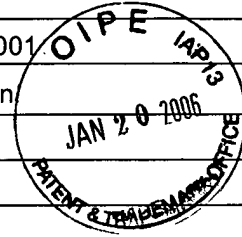
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Effective on 12/08/2004. Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818). <h2 style="margin: 0;">FEE TRANSMITTAL</h2> <h3 style="margin: 0;">for FY 2005</h3>		Complete If Known	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		Application Number	10/017,398
		Filing Date	December 18, 2001
		First Named Inventor	Senthil Sengodan
		Examiner Name	Hao X. Nguyen
		Art Unit	2662
TOTAL AMOUNT OF PAYMENT (\$ ) 120		Attorney Docket No.	005288.00014

**METHOD OF PAYMENT** (check all that apply)
☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify) : \_\_\_\_\_

☒ Deposit Account Deposit Account Number: 19-0733 Deposit Account Name: Banner & Witcoff, LTD.

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee

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**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee(\$)	Fee(\$)	Small Entity Fee(\$)	Fee(\$)	Small Entity Fee(\$)	
Utility	300	150	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____

**2. EXCESS CLAIM FEES****Fee Description**

Each claim over 20 (including Reissues)

Each independent claim over 3 (including Reissues)

Multiple dependent claims

Total Claims	Extra Claims	Fee(\$)	Fee Paid (\$)
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_____ - 20 or HP= _____	x _____	= _____
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HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee(\$)	Fee Paid (\$)
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_____ - 3 or HP= _____	x _____	= _____
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HP = highest number of independent claims paid for, if greater than 3.

**Small Entity**

Fee (\$)	Fee (\$)
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50	25
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200	100
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360	180
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**Multiple Dependent Claims**

Fee (\$)	Fee Paid (\$)
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**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
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**4. OTHER FEE(S)**

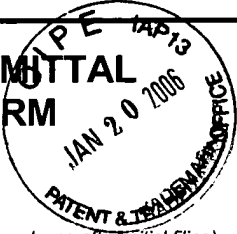
Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge) : Petition for One Month Extension of Time120**SUBMITTED BY**

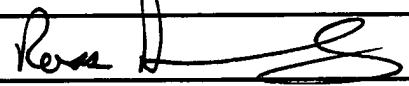
Signature		Registration No. (Attorney/Agent)	49,024	Telephone	(202) 824-3000
Name (Print/Type)	Ross A. Dannenberg	Date	January 20, 2006		

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/017,398
	Filing Date	December 18, 2001
	First Named Inventor	Senthil Sengodan
	Art Unit	2662
	Examiner Name	Hao X. Nguyen
Total Number of Pages in This Submission	Attorney Docket Number	005288.00014

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input checked="" type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Declaration Under 37 CFR 1.131 Exhibits A-E
<b>Remarks</b>  		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm	Banner & Witcoff, LTD.		
Signature			
Printed Name	Ross A. Dannenberg		
Date	January 20, 2006	Reg. No.	49,024

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I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
Signature			
Typed or printed name		Date	

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



## PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2001

Application or Docket Number

10017398

1052.88.000/4

## CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	38	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	38 minus 20 =	* 18
INDEPENDENT CLAIMS	7 minus 3 =	* 4
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

\* If the difference in column 1 is less than zero, enter "0" in column 2

## CLAIMS AS AMENDED - PART II

	(Column 1)		(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	* 38	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>				

SMALL ENTITY TYPE ☐

OR OTHER THAN SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	370.00	OR	BASIC FEE	740.00
X\$ 9=		OR	X\$18=	324
X42=		OR	X84=	336
+140=		OR	+280=	
TOTAL		OR	TOTAL	1,400

SMALL ENTITY

OR

OTHER THAN SMALL ENTITY

RATE	ADDI-TIONAL FEE		RATE	ADDI-TIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL		OR	TOTAL	
ADDIT. FEE		OR	ADDIT. FEE	

(Column 1)

(Column 2)

(Column 3)

	(Column 1)		(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>				

RATE	ADDI-TIONAL FEE		RATE	ADDI-TIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL		OR	TOTAL	
ADDIT. FEE		OR	ADDIT. FEE	

(Column 1)

(Column 2)

(Column 3)

	(Column 1)		(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>				

RATE	ADDI-TIONAL FEE		RATE	ADDI-TIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL		OR	TOTAL	
ADDIT. FEE		OR	ADDIT. FEE	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

# **PATENT APPLICATION FEE DETERMINATION RECORD**

Effective October 1, 2001

Application or Docket Number

10017398

005288.0001

**CLAIMS AS FILED - PART I**

(Column 1) (Column 2)

TOTAL CLAIMS	38	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	38 minus 20 =	18
INDEPENDENT CLAIMS	7 minus 3 =	4
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

\* If the difference in column 1 is less than zero, enter "0" in column 2

**CLAIMS AS AMENDED - PART II**

(Column 1) (Column 2) (Column 3)

AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	38	Minus	38
	Independent	7	Minus	3
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

SMALL ENTITY TYPE ☐

OR OTHER THAN SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	370.00	OR	BASIC FEE	740.00
X\$ 9=		OR	X\$18=	324
X42=		OR	X84=	336
+140=		OR	+280=	
TOTAL		OR	TOTAL	1,460

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$ 9=	
X42=	
+140=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X84=	
+280=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$ 9=	
X42=	
+140=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X84=	
+280=	
TOTAL ADDIT. FEE	

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total		Minus	
	Independent		Minus	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total		Minus	
	Independent		Minus	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."  
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,398	12/18/2001	Senthil Sengodan	005288.00014	8170

22908 7590 07/25/2006

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 CHICAGO, IL 60606

EXAMINER

MATTIS, JASON E

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/017,398	<b>Applicant(s)</b> SENGODAN, SENTHIL	
	<b>Examiner</b> Jason E. Mattis	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2006.  
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-37 and 39 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-37 and 39 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 20 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION

1. This Office Action is in response to the amendment filed 1/20/06. Due to the amendment, the previous claim objections and drawing objections have been withdrawn. Claim 38 has been cancelled and new claim 39 has been added. Claims 1-37 and 39 are currently pending in the application.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al. (U.S. Pat. 6687252 B1) in view of Takeda et al. (U.S. Publication US 2001/0048686 A1) and in further view of Applicant's admitted prior (as found in the Applicant's specification).

**With respect to claim 1**, Bertrand et al. discloses a General Packet Radio System (GPRS) based communications network (**See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a GPRS network**). Bertrand et al. also discloses a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data

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Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activated PDP Context Request message to a SGSN**). Bertrand et al. further discloses the SGSN sending a Create PDP Context Request message to a Gateway GPRS Support Node (GGSN) in response to the Activate PDP Context Request (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request**). Bertrand et al. also discloses the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address to the mobile station (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address**). Bertrand et al. further discloses the SGSN sending an Activate PDP Context Accept message containing information assigning the address to the mobile station in response to the Create PDP Context Response message (**See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal**

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**using an Activate PDP Context Accept message in response to the SGSN receiving the Create PDP Context Response message).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 8 and 32,** Bertrand et al. discloses a method for assigning a network address in a GPRS-based communications network **(See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network).** Bertrand et al. also discloses receiving an Activate PDP Context Request message at a SGSN from a mobile station **(See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN).** Bertrand et al. further discloses sending an Activate PDP Context Accept message to the mobile station containing information assigning an address to the mobile station **(See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message).** Bertrand et al. does not disclose that the Activate PDP Context Request message has an APN field containing information relating to a request for one of a private network

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address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 20**, Bertrand et al. discloses a General Packet Radio System (GPRS) based communications network **(See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a GPRS network)**. Bertrand et al. also discloses a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network **(See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN)**. Bertrand et al. further discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request **(See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request)**. Bertrand et al. also discloses the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP**



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**address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).** Bertrand et al. further discloses the SGSN sending an Activate PDP Context Accept message containing information assigning the address to the mobile station in response to the Create PDP Context Response message **(See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message in response to the SGSN receiving the Create PDP Context Response message).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 28,** Bertrand et al. discloses a method for assigning a network address in a GPRS-based communications network **(See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network).** Bertrand et al. also discloses receiving a Create PDP Context Request message from a SGSN at a GGSN **(See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN).** Bertrand et

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al. further discloses assigning one of a private network address and a public network address to the mobile station and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address**). Bertrand et al. does not disclose that the Create PDP Context Request message has an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 31**, Bertrand et al. discloses a method for assigning a network address in a GPRS-based communications network (**See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network**). Bertrand et al. also discloses receiving a Create PDP Context Request message from a SGSN at a BG (**See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request**). Bertrand et al. further discloses

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assigning one of a private network address and a public network address to the mobile station and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address**). Bertrand et al. does not disclose that the Create PDP Context Request message has an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 39**, Bertrand et al. discloses a method for assigning a network address in a GPRS-based communications network (**See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network**). Bertrand et al. also discloses receiving an Activate PDP Context Request message at a SGSN from a mobile station (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN**). Bertrand et al. further discloses sending an Activate PDP Context Accept message to the mobile station containing information

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assigning an address to the mobile station (**See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message**). Bertrand et al. does not disclose that the Activate PDP Context Request message has an APN field containing information indicating a type of requested network address, with the type being one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 2, 14, and 22**, Bertrand et al. does not disclose that the Activate PDP Context Accept message contains address assignment information based on the information contained in the APN field of the Activate PDP Context Request message.

**With respect to claims 4, 16, 24, and 34**, Bertrand et al. does not disclose that the APN field information implicitly indicates one of a private network address and a public network address.

**With respect to claim 9**, Bertrand et al. discloses sending a Create PDP Context Request message from the SGSN to a GGSN (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request**). Bertrand et al. also discloses receiving a Create PDP Context Response message from the GGSN containing information assigning an

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address (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address**). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 10**, Bertrand et al. further discloses the SGSN sending a Create PDP Context Request message to a Gateway GPRS Support Node (GGSN) in response to the Activate PDP Context Request (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request**). Bertrand et al. also discloses the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address to the mobile station (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message**

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**from the GGSN to the SGSN containing information assigning the address).**

Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address.

Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 11,** Bertrand et al. discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request **(See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request).** Bertrand et al. also discloses sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned

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based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 12**, Bertrand et al. discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request **(See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request)**. Bertrand et al. also discloses the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address)**. Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network

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address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 1, 8, 20, 28, 31, and 39, Takeda et al., in the field of communications, discloses an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address (See pages 2-3 paragraphs 26-27 and page 5 paragraphs 71-72 and 89-90 of Takeda et al. for reference to an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information identifying a destination network gateway node, which is information relating to a request for an address).** Using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address has the advantage of allowing address assignment to be based on the destination network that a mobile station is requesting to communicate with.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Takeda et al., to combine using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address, as suggested by Takeda et al., with the system and method of Bertrand et al., with the motivation being to allow address assignment to be based on the destination network that a mobile station is requesting to communicate with.



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**With respect to claims 1, 8, 20, 28, 31, and 39,** Although Takeda et al. discloses using an APN field identifying the destination network that a mobile station wishes to communicate, the combination of Bertrand et al., and Takeda et al. does not disclose using destination network information to assign one of a private network address and a public network address to the mobile station. Applicant's admitted prior art discloses using destination network information to assign one of a private network address and a public network address to a mobile station as implicitly indicated by the destination network information **(See page 4 paragraph 8 of the Applicant's specification for reference to using information about which domain, or network, a host, or mobile station, is to be in communication with in order to determine whether to assign a private IP address or a public IP address)**. Using destination network information to assign one of a private network address and a public network address to a mobile station has the advantage of allowing a limited pool of public IP addresses to be assigned to mobile stations only when absolutely needed.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the Applicant's admitted prior art, to combine using destination network information to assign one of a private network address and a public network address to a mobile station, as suggested by the Applicant's admitted prior art, with the system and method of Bertrand et al. and Takeda et al., with the motivation being to allow a limited pool of public IP addresses to be assigned to mobile stations only when absolutely needed.

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**With respect to claims 3, 15, 23, and 33**, although the combination of Bertrand et al., Takeda et al., and the Applicant's admitted prior art does not specifically disclose explicitly indicating one of a private network address and a public network address, explicitly indicating information in a request is old and well known in the field of communications. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine explicitly indicating one of a public network address or a private network address with the system and method of Bertrand et al., Takeda et al., and the Applicant's admitted prior art, with the motivation being to allow less processing to be performed at the receiving end of the request since the type of address is explicitly stated in the request.

**With respect to claims 5, 17, 25, and 35**, Bertrand et al. discloses that address is one of an IPv4 or IPv6 network address (**See column 3 lines 2-11 of Bertrand et al. for reference to assigned addresses being IP addresses, which at the time of the invention, are in the form of IPv4 or IPv6 network addresses**).

**With respect to claims 6, 18, 26, 29, and 36**, Bertrand et al. discloses that the network is a GPRS communications network (**See column 1 lines 7-11 for reference to the system being a GPRS communications system**).

**With respect to claims 13 and 21**, Bertrand et al. discloses sending the Create PDP Context Request message from the SGSN to a GGSN and from the GGSN to the BG (**See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN**

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**receiving the Activate PDP Context Request).** Bertrand et al. also discloses receiving the Create PDP Context Response message at the GGSN from the BG and at the SGSN from the GGSN **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).**

4. Claims 7, 19, 27, 30, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al., in view of Takeda et al., and Applicant's admitted prior art as applied to claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 above, and further in view of Boudreaux (U.S. Pat. 6466556 B1).

**With respect to claims 7, 19, 27, 30, and 37,** the combination of Bertrand et al., Takeda et al., and Applicant's admitted prior art does not disclose using a Universal Mobile Telecommunications System.

**With respect to claims 7, 19, 27, 30, and 37,** Boudreaux, in the field of communications discloses using a Universal Mobile Telecommunications System **(See column 1 lines 48-61 of Boudreaux for reference to using a Universal Mobile Telecommunications System).** Using a Universal Mobile Telecommunications System has the advantage of using a widely accepted and used communication system architecture.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Boudreaux, to combine using a Universal Mobile Telecommunications System, as suggested by Boudreaux, with the system and

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method of Bertrand et al., Takeda et al., and Applicant's admitted prior art, with the motivation being to use a widely accepted and used communication system architecture.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-37 and 39 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Page 18

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jem



**HUY D. VU**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**

<b>Notice of References Cited</b>	Application/Control No. 10/017,398	Applicant(s)/Patent Under Reexamination SENGODAN, SENTHIL	
	Examiner Jason E. Mattis	Art Unit 2616	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,466,556 B1	10-2002	Boudreaux, Paul H.	370/331
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

**Index of Claims**

Application/Control No.

10/017,398

Examiner

Jason E. Mattis

Applicant(s)/Patent under  
Reexamination

SENGODAN, SENTHIL

Art Unit

2616

√	Rejected
=	Allowed

—	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date									
Final	Original	7/10/06									
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## UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov



Bib Data Sheet

CONFIRMATION NO. 8170

<b>SERIAL NUMBER</b> 10/017,398	<b>FILING DATE</b> 12/18/2001 <b>RULE</b>	<b>CLASS</b> 370	<b>GROUP ART UNIT</b> 2661	<b>ATTORNEY DOCKET NO.</b> 005288.00014	
<b>APPLICANTS</b> Senthil Sengodan, Burlington, MA; <b>** CONTINUING DATA *****</b> <b>** FOREIGN APPLICATIONS *****</b> <i>none for 7/10/26</i> <b>IF REQUIRED, FOREIGN FILING LICENSE GRANTED</b> <b>** 01/17/2002</b>					
Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no 35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after Allowance Verified and Acknowledged <i>[Signature]</i> Examiner's Signature Initials		<b>STATE OR COUNTRY</b> MA	<b>SHEETS DRAWING</b> 6	<b>TOTAL CLAIMS</b> 38	<b>INDEPENDENT CLAIMS</b> 7
<b>ADDRESS</b> 22907					
<b>TITLE</b> Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security					
<b>FILING FEE RECEIVED</b> 1400	<b>FEES:</b> Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		



**Search Notes**

Application/Control No.

10/017,398

Examiner

Jason E. Mattis

Applicant(s)/Patent under  
Reexamination

SENGODAN, SENTHIL

Art Unit

2616

**SEARCHED**

Class	Subclass	Date	Examiner

**INTERFERENCE SEARCHED**

Class	Subclass	Date	Examiner

**SEARCH NOTES  
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
Repeated text search of previous areas .	7/10/2006	JM

Appln. No. 10/017,398  
Amendment dated October 4, 2006  
Reply to Office Action of July 25, 2006

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

(Attorney Docket No. 005288.00014)

In re U.S. Patent Application of	)	
Senthil SENGODAN	)	Art Unit: 2616
	)	
Application No. 10/017,398	)	Examiner: Mattis, Jason E.
	)	
Filed: December 18, 2001	)	Confirmation No. 8170
	)	
For: METHOD AND APPARATUS FOR	)	
ADDRESS ALLOCATION IN GPRS	)	
NETWORKS THAT FACILITATES END-	)	
TO-END SECURITY	)	

**RESPONSE**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

Sir:

This paper is responsive to the non-final Office Action dated July 25, 2006. The Office Action set a three-month period for response, thus making this paper due on or before **October 25, 2006**. The Commissioner is hereby authorized to charge any fee or credit any overpayment of fee to Deposit Account No. 19-0733.

**Remarks/Arguments** begin on page 2 of this paper.

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Amendment dated October 4, 2006  
Reply to Office Action of July 25, 2006

PATENT

### REMARKS/ARGUMENTS

The Office Action of July 25, 2006, has been carefully reviewed and these remarks are responsive thereto. Claims 1-37 and 39 remain pending and allowance of the instant application are respectfully requested.

#### *Claim Rejections Under 35 U.S.C. §103(a)*

Claims 1-6, 8-19, 20-26, 28-29, 31-36, and 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand *et al.* (U.S. patent No. 6,687,252, hereinafter “Bertrand”) in view of Takeda *et al.* (U.S. Publication No. US 2001/0048686 A1) and further in view of Applicant’s admitted prior art (as found in Applicant’s specification at paragraph 8). This rejection is respectfully traversed for the following reasons.

Independent claims 1, 8, 20, 28, 31 and 32 all relate to, *inter alia*, a GGSN assigning one of a private network address and a public network address to a mobile station based on information contained in an APN field of a Create PDP Context Request message. The information contained in the APN field is transmitted by the requesting mobile terminal and relates to a request for one of a private network address and a public network address. As recognized in the Office Action, neither Bertrand nor Takeda, either separately or in combination, teaches or suggests such a feature. While Bertrand and Takeda both disclose an APN field, neither one teaches or suggests that the assignment of a private or a public network address is based on information in the APN field related to the request by the mobile station. Neither Bertrand nor Takeda provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner suggested by the Applicant.

Additionally in Takeda, it is the DHCP server that assigns the IP address to the mobile terminal, not the gateway node. P. 6, ¶ 95. Even so, Takeda does not teach or suggest that the DHCP, in allocating IP addresses, evaluates or receives any information contained in the APN relating to the mobile terminal’s request for one of a public network address or a private network address. Neither Bertrand nor Takeda provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner suggested by the Applicant.

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Paragraph 8 of Applicant's Background of the Invention does not remedy these deficiencies in Bertrand and Takeda. Paragraph 8 describes the use of a Network Address Translator (NAT). A NAT is used when a host that is assigned to a private address within an administrative domain intends to send an IP address (and possibly other selected fields within the datagram) into a public IP address prior to the IP datagram being sent outside the administrative domain associated with the NAT. A NAT transforms a private IP address (and possibly other selected fields within the datagram) into a public IP address prior to the IP datagram being sent outside the administrative domain associated with the NAT. Similarly, when an IP datagram is sent from a host that is outside the administrative domain associated with the NAT to a host with a private address, then the NAT transforms a public IP address to a private address.

A NAT does not conserve public IP addresses and simultaneously maintain end-to-end security and application friendliness. Indeed, as explained in paragraph 11 of the present application, there are two major drawbacks associated with the use of a NAT. The first major drawback is that the NAT-based approach breaks the end-to-end security model by changing the destination address of a datagram and thereby invalidating the authentication header of the datagram. The second major drawback is that certain types of applications cannot work in the presence of a NAT, unless remedial measures are taken, such as the inclusion of an application gateway (proxy). For example when an IP address is embedded into an application protocol unit (PDU), and ALG (Application Level Gateway) is required so that the embedded IP address is changed because a conventional NAT-based address assignment operation will not change the embedded IP address.

As explained in paragraph 12 of the present application, in order to overcome the disadvantages associated with NATs, i.e., the security break and the "unfriendliness" toward some applications, a mechanism commonly referred to as Realm Specific IP (RSIP) has gained significant support within the Internet Engineering Task Force (IETF). As noted in paragraphs 13-17 of the present application, RSIP protocol makes use of a NAT unnecessary, and thereby avoids the drawbacks involving NATs.

In view of the drawbacks involving NATs, and the teaching away of using NATs by using RSIP protocol, one of ordinary skill in the art would not be motivated to incorporate a NAT into a combination of Bertrand and Takeda to provide the present invention. Even if a NAT is

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Reply to Office Action of July 25, 2006

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incorporated into a combination of Bertrand and Takeda, the combination of the three references would not result in the present invention. A NAT does not involve a Create PDP Context message having an APN field containing information relating to a request for one of a private network address and a public network address. Rather, a NAT simply transforms a private IP address into a public IP address when a host intends to send an IP datagram to a host that is outside the administrative domain of the sending host.

The Office Action may not use Applicant's invention as a blueprint for combining distinct components/features found in Bertrand, Takeda, and a NAT as described in paragraph 8 of the present application. As such, claims 1, 8, 20, 28 and 32 are allowable for at least this reason.

Claims 2-7, 9-19, 21-27, 29, 30 and 33-37 are allowable for at least the same reasons as their respective base claims and further in view of the novel and non-obvious features recited therein. For example, claims 3, 15, 23 and 33 relate to, *inter alia*, information contained in the APN field of the Activate PDP Context Request message explicitly indicating one of a private network address and a public network address. As discussed on p. 13 of Applicant's specification, the inserted information (in the APN field) relating to whether a public or a private address assignment is desired can be an explicit indication, such as a particular bit (or bits) of the APN field being set, such as is claimed in claims 3, 15, 23 and 33. Neither Bertrand nor Takeda nor a NAT, separately or in combination, teaches or suggests such a feature. The Office Action even admits this deficiency of Bertrand and Takeda. Instead, the Office Action alleges that ¶¶ 26-27, 71-72, and 89-90 of Takeda disclose an "an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address." Even assuming the validity of such an allegation, merely containing information relating to a request is distinguishable from containing information in the APN field *explicitly indicating* one of a private network address and a public network address. Significantly, the cited passages only disclose an APN for identifying a gateway node. There is no teaching or suggestion that the APN field includes any explicit indicators of whether a private network address or a public network address is being requested. Claims 3, 15, 23 and 33 are thus allowable for this additional reason.

Claim 39 recites, *inter alia*, "the Activate PDP Context Request message having an APN field containing one or more parameters indicating a type of requested network address, wherein

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Reply to Office Action of July 25, 2006

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the type is one of a private network address and a public network address.” Neither Bertrand, Takeda, Applicant’s admitted prior art regarding NATs, separately or in combination, teaches or suggests such a feature. Although both Bertrand and Takeda disclose APNs, neither teaches or suggests that the APN contains a parameter indicating a type of requested network address. In fact, nowhere does Bertrand or Takeda disclose that a mobile terminal can request a specific type (i.e., private or public) of network address. Applicant’s admitted prior art regarding NATs do not remedy this deficiency in Bertrand and Takeda. Claim 39 is thus allowable for at least this reason.

### ***Claim Rejections Under Boudreaux***

Claims 7, 19, 27, 30 and 37 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand in view of Takeda and Applicant’s admitted prior art on NAT as applied to claims 1-6, 8-18, 20-26, 28-29, 31-36 and 39 above, and further in view of Boudreaux (U.S. Patent No. 6,466,556. This rejection is respectfully traversed for the following reasons.

Claims 7, 19, 27, 30 and 37 all relate to a GPRS-based communications network that is a Universal Mobile Telecommunications System. The Office Action, on page 16, concedes that Bertrand and Takeda and Applicant’s admitted prior art does not disclose such a feature. While Boudreaux may teach a Universal Mobile Telecommunications System, it does not remedy the failure of Bertrand, Takeda, and Applicant’s admitted prior art to teach the claimed invention of the independent claims upon which 7, 19, 27, 30 and 37 depend from. As such, claims 7, 19, 27, 30 and 37 are allowable for over the proposed combination of Bertrand, Takeda, Applicant’s admitted prior art regarding NAP, and Boudreaux.

### **CONCLUSION**

All rejections having been addressed, Applicants respectfully submit that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. However, if for any reason the Examiner believes the application is not in condition for allowance or there are any questions, the Examiner is requested to contact the undersigned at (312) 463-5405.

Appln. No. 10/017,398  
Amendment dated October 4, 2006  
Reply to Office Action of July 25, 2006

PATENT

Dated: October 4, 2006

Respectfully submitted,

By:



Robert H. Resis

Registration No. 32,168

BANNER & WITCOFF, LTD.

10 South Wacker Drive, Suite 3000

Chicago, IL 60606

Direct Dial: 312-463-5405

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	1234608
<b>Application Number:</b>	10017398
<b>Confirmation Number:</b>	8170
<b>Title of Invention:</b>	Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security
<b>First Named Inventor:</b>	Senthil Sengodan
<b>Customer Number:</b>	22908
<b>Filer:</b>	Robert H. Resis/Alma Bahena
<b>Filer Authorized By:</b>	Robert H. Resis
<b>Attorney Docket Number:</b>	005288.00014
<b>Receipt Date:</b>	04-OCT-2006
<b>Filing Date:</b>	18-DEC-2001
<b>Time Stamp:</b>	13:26:14
<b>Application Type:</b>	Utility
<b>International Application Number:</b>	

### Payment information:

Submitted with Payment	no
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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part	Pages
1		Response14.pdf	396979	yes	6



## Multipart Description

	Multipart Description		
	Doc Desc	Start	End
	Amendment - After Non-Final Rejection	1	1
	Applicant Arguments/Remarks Made in an Amendment	2	6

## Warnings:

## Information:

Total Files Size (in bytes):

396979

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

# **PATENT APPLICATION FEE DETERMINATION RECORD**

Effective October 1, 2001

Application / Docket Number

10017398

005288.0000

**CLAIMS AS FILED - PART I**

(Column 1) (Column 2)

TOTAL CLAIMS	38	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	38 minus 20 =	18
INDEPENDENT CLAIMS	7 minus 3 =	4
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

\* If the difference in column 1 is less than zero, enter "0" in column 2

**CLAIMS AS AMENDED - PART II**

(Column 1) (Column 2) (Column 3)

AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PARENT EXTRA
	Total	• 38	Minus	• 35
	Independent	• 7	Minus	• 7
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

SMALL ENTITY TYPE ☐ OR

OTHER THAN SMALL ENTITY

RATE	FEE	OR	RATE	FEE
BASIC FEE	370.00	OR	BASIC FEE	740.00
X\$ 9=		OR	X\$18=	324
X42=		OR	X84=	336
+140=		OR	+280=	
TOTAL		OR	TOTAL	1,460

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDT. FEE		OR	TOTAL ADDT. FEE	

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDT. FEE		OR	TOTAL ADDT. FEE	

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDT. FEE		OR	TOTAL ADDT. FEE	

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PARENT EXTRA
	Total	• 38	Minus	• 38
	Independent	• 7	Minus	• 7
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PARENT EXTRA
	Total	•	Minus	•
	Independent	•	Minus	•
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,398	12/18/2001	Senthil Sengodan	005288.00014	8170
22908	7590	12/14/2006	EXAMINER	
BANNER & WITCOFF, LTD. TEN SOUTH WACKER DRIVE SUITE 3000 CHICAGO, IL 60606			MATTIS, JASON E	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/017,398

Applicant(s)

SENGODAN, SENTHIL

Examiner

Jason E. Mattis

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 October 2006.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 and 39 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-37 and 39 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_  
 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_  
 5) ☐ Notice of Informal Patent Application  
 6) ☐ Other: \_\_\_\_\_

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### DETAILED ACTION

1. This Office Action is in response to the amendment filed 10/4/06. Claims 1-37 and 39 are currently pending in the application.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al. (U.S. Pat. 6687252 B1) in view of Takeda et al. (U.S. Publication US 2001/0048686 A1) and in further view of Applicant's admitted prior (as found in the Applicant's specification).

**With respect to claim 1,** Bertrand et al. discloses a General Packet Radio System (GPRS) based communications network (**See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a GPRS network**). Bertrand et al. also discloses a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for**

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**reference to a mobile terminal (MT), which is a mobile station, sending an Activated PDP Context Request message to a SGSN).** Bertrand et al. further discloses the SGSN sending a Create PDP Context Request message to a Gateway GPRS Support Node (GGSN) in response to the Activate PDP Context Request **(See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request).** Bertrand et al. also discloses the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address).** Bertrand et al. further discloses the SGSN sending an Activate PDP Context Accept message containing information assigning the address to the mobile station in response to the Create PDP Context Response message **(See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message in response to the SGSN receiving the Create PDP Context Response message).** Bertrand et al. does not

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disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 8 and 32, Bertrand et al. discloses a method for assigning a network address in a GPRS-based communications network (See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network).** Bertrand et al. also discloses receiving an Activate PDP Context Request message at a SGSN from a mobile station **(See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN).** Bertrand et al. further discloses sending an Activate PDP Context Accept message to the mobile station containing information assigning an address to the mobile station **(See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message).** Bertrand et al. does not disclose that the Activate PDP Context Request message has an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the

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public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 20**, Bertrand et al. discloses a General Packet Radio System (GPRS) based communications network (**See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a GPRS network**). Bertrand et al. also discloses a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN**). Bertrand et al. further discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request (**See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request**). Bertrand et al. also discloses the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request**



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message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address). Bertrand et al. further discloses the SGSN sending an Activate PDP Context Accept message containing information assigning the address to the mobile station in response to the Create PDP Context Response message (**See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message in response to the SGSN receiving the Create PDP Context Response message**). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 28**, Bertrand et al. discloses a method for assigning a network address in a GPRS-based communications network (**See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network**). Bertrand et al. also discloses receiving a Create PDP Context Request message from a SGSN at a GGSN (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN**). Bertrand et al. further discloses assigning one of a private network address and a public network

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address to the mobile station and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address**). Bertrand et al. does not disclose that the Create PDP Context Request message has an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 31**, Bertrand et al. discloses a method for assigning a network address in a GPRS-based communications network (**See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network**). Bertrand et al. also discloses receiving a Create PDP Context Request message from a SGSN at a BG (**See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request**). Bertrand et al. further discloses assigning one of a private network address and a public network address to the mobile

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station and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address**). Bertrand et al. does not disclose that the Create PDP Context Request message has an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 39**, Bertrand et al. discloses a method for assigning a network address in a GPRS-based communications network (**See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network**). Bertrand et al. also discloses receiving an Activate PDP Context Request message at a SGSN from a mobile station (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN**). Bertrand et al. further discloses sending an Activate PDP Context Accept message to the mobile station containing information assigning an address to the mobile station (**See column 5 lines 52-67 of Bertrand et**

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**al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message).** Bertrand et al. does not disclose that the Activate PDP Context Request message has an APN field containing information indicating a type of requested network address, with the type being one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 2, 14, and 22,** Bertrand et al. does not disclose that the Activate PDP Context Accept message contains address assignment information based on the information contained in the APN field of the Activate PDP Context Request message.

**With respect to claims 4, 16, 24, and 34,** Bertrand et al. does not disclose that the APN field information implicitly indicates one of a private network address and a public network address.

**With respect to claim 9,** Bertrand et al. discloses sending a Create PDP Context Request message from the SGSN to a GGSN (See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request). Bertrand et al. also discloses receiving a Create PDP Context Response message from the GGSN containing information assigning an address (See the abstract and column 5 lines 16-67 of Bertrand et al. for reference

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to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 10**, Bertrand et al. further discloses the SGSN sending a Create PDP Context Request message to a Gateway GPRS Support Node (GGSN) in response to the Activate PDP Context Request **(See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request)**. Bertrand et al. also discloses the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address)**.

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Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 11,** Bertrand et al. discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request **(See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request).** Bertrand et al. also discloses sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned

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based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 12**, Bertrand et al. discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request (See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request). Bertrand et al. also discloses the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station (See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information relating to a request for one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network

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address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 1-2, 4, 8-12, 14, 16, 20, 22, 24, 28, 31-32, 34, and 39,** Takeda et al., in the field of communications, discloses an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address **(See pages 2-3 paragraphs 26-27 and page 5 paragraphs 71-72 and 89-90 of Takeda et al. for reference to an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information identifying a destination network gateway node, which is information relating to a request for an address).** Using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address has the advantage of allowing address assignment to be based on the destination network that a mobile station is requesting to communicate with.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Takeda et al., to combine using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address, as suggested by Takeda et al., with the system and method of Bertrand et al., with the motivation being to allow address assignment to be based on the destination network that a mobile station is requesting to communicate with.



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**With respect to claims 1-2, 4, 8-12, 14, 16, 20, 22, 24, 28, 31-32, 34, and 39,**

Although Takeda et al. discloses using an APN field identifying the destination network that a mobile station wishes to communicate, the combination of Bertrand et al., and Takeda et al. does not disclose using destination network information to assign one of a private network address and a public network address to the mobile station.

Applicant's admitted prior art discloses using destination network information to assign one of a private network address and a public network address to a mobile station as implicitly indicated by the destination network information **(See page 4 paragraph 8 of the Applicant's specification for reference to using information about which domain, or network, a host, or mobile station, is to be in communication with in order to determine whether to assign a private IP address or a public IP address).**

Using destination network information to assign one of a private network address and a public network address to a mobile station has the advantage of allowing a limited pool of public IP addresses to be assigned to mobile stations only when absolutely needed.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the Applicant's admitted prior art, to combine using destination network information to assign one of a private network address and a public network address to a mobile station, as suggested by the Applicant's admitted prior art, with the system and method of Bertrand et al. and Takeda et al., with the motivation being to allow a limited pool of public IP addresses to be assigned to mobile stations only when absolutely needed.

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**With respect to claims 3, 15, 23, and 33**, although the combination of Bertrand et al., Takeda et al., and the Applicant's admitted prior art does not specifically disclose explicitly indicating one of a private network address and a public network address, explicitly indicating information in a request is old and well known in the field of communications. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine explicitly indicating one of a public network address or a private network address with the system and method of Bertrand et al., Takeda et al., and the Applicant's admitted prior art, with the motivation being to allow less processing to be performed at the receiving end of the request since the type of address is explicitly stated in the request.

**With respect to claims 5, 17, 25, and 35**, Bertrand et al. discloses that address is one of an IPv4 or IPv6 network address (**See column 3 lines 2-11 of Bertrand et al. for reference to assigned addresses being IP addresses, which at the time of the invention, are in the form of IPv4 or IPv6 network addresses**).

**With respect to claims 6, 18, 26, 29, and 36**, Bertrand et al. discloses that the network is a GPRS communications network (**See column 1 lines 7-11 for reference to the system being a GPRS communications system**).

**With respect to claims 13 and 21**, Bertrand et al. discloses sending the Create PDP Context Request message from the SGSN to a GGSN and from the GGSN to the BG (**See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN**

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**receiving the Activate PDP Context Request).** Bertrand et al. also discloses receiving the Create PDP Context Response message at the GGSN from the BG and at the SGSN from the GGSN **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).**

4. Claims 7, 19, 27, 30, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al., in view of Takeda et al., and Applicant's admitted prior art as applied to claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 above, and further in view of Boudreaux (U.S. Pat. 6466556 B1).

**With respect to claims 7, 19, 27, 30, and 37,** the combination of Bertrand et al., Takeda et al., and Applicant's admitted prior art does not disclose using a Universal Mobile Telecommunications System.

**With respect to claims 7, 19, 27, 30, and 37,** Boudreaux, in the field of communications discloses using a Universal Mobile Telecommunications System **(See column 1 lines 48-61 of Boudreaux for reference to using a Universal Mobile Telecommunications System).** Using a Universal Mobile Telecommunications System has the advantage of using a widely accepted and used communication system architecture.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Boudreaux, to combine using a Universal Mobile Telecommunications System, as suggested by Boudreaux, with the system and

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method of Bertrand et al., Takeda et al., and Applicant's admitted prior art, with the motivation being to use a widely accepted and used communication system architecture.

### ***Response to Arguments***

5. Applicant's arguments filed 10/4/06 have been fully considered but they are not persuasive.

In response to Applicant's argument that:

"Paragraph 8 of Applicant's Background of the Invention does not remedy these deficiencies in Bertrand and Takeda." (See page 3 of Applicant's Remarks/Arguments section)

the Examiner respectfully disagrees. The rejection above of the claim limitation regarding "assigning one of a private network address and a public network address to a mobile station based on information contained in an APN filed of a Create PDP Context Request message" (see page 2 of Applicant's Remarks/Arguments section) is based on a combination of the teachings of Bertrand et al., Takeda et al. and the Applicant's admitted prior art. As shown in the rejections above, Bertrand et al. discloses a GPRS-based communications network. Bertrand et al. does not disclose assigning one of a private network address and a public network address to a mobile station based on information contained in an APN filed of a Create PDP Context Request message. Takeda et al. discloses an APN Create PDP Context Request

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message having an APN field that identifies the location of a destination of a requested connection (See pages 2-3 paragraphs 26-27 of Takeda). Takeda et al. does not disclose using information about the location of destination of a requested connection to determine whether to assign a public or private IP address. Applicant's admitted prior art discloses determining whether to assign a public or private IP address based on the location of destination of a requested connection (See page 4 paragraph 08 of Applicant's specification). Therefore, the rejection above is based on a combination of the system as disclosed by Bertrand et al., with the inclusion of an APN field that identifies the location of a destination of a requested connection, as disclosed by Takeda et al., and with Applicant's admitted prior art teaching of determining whether to assign a public or private IP address based on the location of destination of a requested connection. Therefore, since the combined teachings disclose all the claimed limitations, and since there is a motivation to combine the teachings, as shown in the rejections above, the rejection is proper.

In response to Applicant's argument the teachings of Bertrand et al. and Takeda et al. do not disclose explicitly indicating one of a request for a private network address and a public network address, the Examiner agrees. However, it is noted that in the rejections above Official Notice has been taken that explicitly indicating one of a private network address and a public network address in a request is old and well known in the field of communications. Newly cited Publication Iyer et al. (U.S. Publication US 2002/0116502 A1) is offered as proof that explicitly indicating one of a private network address and a public network address in a request is old and well known in the field of

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communications. Iyer et al. discloses explicitly indicating a request for a public IP address (See page 1 paragraph 22 of Iyer et al.).

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jem

A handwritten signature in black ink, appearing to read 'Huy D. Vu', with a long horizontal line extending to the right.

HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

<b>Notice of References Cited</b>	Application/Control No. 10/017,398		Applicant(s)/Patent Under Reexamination SENGODAN, SENTHIL	
	Examiner Jason E. Mattis		Art Unit 2616	Page 1 of 1

## U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2002/0116502 A1	08-2002	Iyer et al.	709/227
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

## FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

## NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



**Index of Claims**

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10/017,398

Examiner

Jason E. Mattis

Applicant(s)/Patent under  
Reexamination

SENGODAN, SENTHIL

Art Unit

2616

√	Rejected
=	Allowed

—	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date						
Final	Original	11/27/06						
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## Search Notes



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**Examiner**

**Jason E. Mattis**

**Applicant(s)/Patent under Reexamination**

SENGODAN, SENTHIL

**Art Unit**

2616

**SEARCHED**

[illegible]

**INTERFERENCE SEARCHED**

Class	Subclass	Date	Examiner

**SEARCH NOTES**  
**(INCLUDING SEARCH STRATEGY)**

[illegible]

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

(Attorney Docket No. 005288.00014)

In re U.S. Patent Application of	)	
Senthil SENGODAN	)	Art Unit: 2616
	)	
Application No. 10/017,398	)	Examiner: Mattis, Jason E.
	)	
Filed: December 18, 2001	)	Confirmation No. 8170
	)	
For: Method and Apparatus for Address	)	
Allocation in GPRS Networks that	)	
Facilitates End-To-End Security	)	

**AMENDMENT AND RESPONSE**

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

Sir:

This paper is responsive to the final Office Action dated December 14, 2006. The Office Action set a three-month period for response, thus making this paper due on or before **March 14, 2007**. The Commissioner is hereby authorized to charge any fee or credit any overpayment of fee to Deposit Account No. 19-0733.

**Amendments to the Claims** are reflected in the Listing of Claims, which begins on page 2 of this paper.

**Remarks/Arguments** begin on page 14 of this paper.

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This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A General Packet Radio System (GPRS) -based communications network comprising:

a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting ~~relating to a request for~~ one of a private network address and a public network address; and

a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network,

the SGSN sending a Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address,

the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message, and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message,

the SGSN sending an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message, the Activate PDP Context Accept message containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

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2. (Original) The GPRS-based communications network according to claim 1, wherein the mobile station receives the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

3. (Cancelled)

4. (Cancelled)

5. (Original) The GPRS-based communications network according to claim 1, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

6. (Original) The GPRS-based communications network according to claim 1, wherein the GPRS-based communications network is a GPRS communications network.

7. (Original) The GPRS-based communications network according to claim 1, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

8. (Currently amended) A method for assigning a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving GPRS Support Node (SGSN) of the GPRS-based communications network from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting relating ~~to a request for~~ one of a private network address and a public network address; and

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sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

9. (Original) The method according to claim 8, further comprising steps of:

sending a Create PDP Context Request message from the SGSN to a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

receiving a Create PDP Context Response message from the GGSN containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

10. (Original) The method according to claim 9, further comprising steps of:

receiving the Create PDP Context Request message from the SGSN at the GGSN;  
assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

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11. (Original) The method according to claim 8, further comprising steps of:

sending a Create PDP Context Request message from the SGSN to a Border Gateway (BG) of the GPRS-based communications network, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

receiving a Create PDP Context Response message at the SGSN from the BG containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

12. (Original) The method according to claim 11, further comprising steps of:

receiving the Create PDP Context Request message at the BG;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

sending the Create PDP Context Response message to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

13. (Original) The method according to claim 12, further comprising steps of:

sending the Create PDP Context Request message from the SGSN to a Gateway GPRS Support Node (GGSN) of the GPRS-based communications network;

sending the Create PDP Context Request message from the GGSN to the BG;

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receiving the Create PDP Context Response message at the GGSN from the BG;  
and

receiving the Create PDP Context Response message at the SGSN from the GGSN.

14. (Original) The method according to claim 8, further comprising a step receiving at the mobile station the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

15. (Cancelled)

16. (Cancelled)

17. (Original) The method according to claim 8, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

18. (Original) The method according to claim 8, wherein the GPRS-based communications network is a GPRS communications network.

19. (Original) The method according to claim 8, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

20. (Currently amended) A General Packet Radio System (GPRS) -based communications network comprising:

a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications



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network, the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting relating to a request for one of a private network address and a public network address; and

a Border Gateway (BG) of the GPRS-based communications network,

the SGSN sending a Create PDP Context Request message from the SGSN to the BG in response to the Activate PDP Protocol Context Request, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address,

the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message, and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message,

the SGSN sending an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message, the Activate PDP Context Accept message containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

21. (Previously amended) The GPRS-based communications network according to claim 20, further comprising a Gateway GPRS Support Node (GGSN), and

wherein the SGSN sending the Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request,

wherein the GGSN sending the Create PDP Context Request message from the GGSN to the BG, and

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wherein the BG sends the Create PDP Context Response message from the BG to the GGSN and the GGSN sends the Create PDP Context Response message from the GGSN to the SGSN.

22. (Original) The GPRS-based communications network according to claim 20, wherein the mobile station receives the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

23. (Cancelled)

24. (Cancelled)

25. (Original) The GPRS-based communications network according to claim 20, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

26. (Original) The GPRS-based communications network according to claim 20, wherein the GPRS-based communications network is a GPRS communications network.

27. (Original) The GPRS-based communications network according to claim 20, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

28. (Currently amended) A method for assigning a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

receiving a Create Packet Data Protocol (PDP) Context Request message from a Serving GPRS Support Node (SGSN) at Gateway GPRS Support Node (GGSN), the Create PDP Context Request Message having an APN field containing information that explicitly indicates

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~~requesting relating to a request~~ for one of a private network address and a public network address for a mobile station of the GPRS-based communications network;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

29. (Original) The method according to claim 28, wherein the GPRS-based communications network is a GPRS communications network.

30. (Original) The method according to claim 28, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

31. (Currently amended) A method for assigning a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

receiving a Create Packet Data Protocol (PDP) Context Request message from a Serving GPRS Support Node (SGSN) at Border Gateway (BG), the Create PDP Context Request Message having an APN field containing information that explicitly indicates requesting relating to a request for one of a private network address and a public network address for a mobile station of the GPRS-based communications network;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

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sending the Create PDP Context Response message from the BG to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

32. (Currently amended) A method for requesting an assignment of a network address in a General Packet Radio System (GPRS) -based communications network, the method comprising:

sending an Activate Packet Data Protocol (PDP) Context Request message to a Serving GPRS Support Node (SGSN) of the GPRS-based communications network from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting ~~relating to a request for~~ one of a private network address and a public network address; and

receiving at the mobile station an Activate PDP Context Accept message containing information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

33. (Cancelled)

34. (Cancelled)

35. (Original) The method according to claim 32, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

36. (Original) The method according to claim 32, wherein the GPRS-based communications network is a GPRS communications network.

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37. (Original) The method according to claim 32, wherein the GPRS-based communications network is a Universal Mobile Telecommunications System.

38. (Cancelled)

39. (Currently Amended) A method for assigning a network address in a General Packet Radio System (GPRS)-based communications network, the method comprising:

receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving GPRS Support Node (SGSN) of the GPRS-based communications network from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing one or more parameters that explicitly indicates requesting ~~indicating a type of requested network address, wherein the type is one of a private network address and a public network address; and~~

sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address to the mobile station based on the one or more parameters indicating the type of requested network address contained in the APN field of the Activate PDP Context Request message.

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### REMARKS/ARGUMENTS

The Office Action of December 14, 2006, has been carefully reviewed and these remarks are responsive thereto. Independent claims 1, 8, 20, 28, 31, 32, and 39 have been amended. Claims 3-4, 15-16, 33-34 and 38 have been cancelled. Claims 1-2, 5-14, 17-22, 25-32, 35-37 and 39 remain pending and allowance of the instant application are respectfully requested.

#### ***Claim Rejections Under 35 U.S.C. §103(a)***

Claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand *et al.* (U.S. patent No. 6,687,252, hereinafter “Bertrand”) in view of Takeda *et al.* (U.S. Publication No. US 2001/0048686 A1) and further in view of Applicant’s alleged admitted prior art (as found in Applicant’s specification at paragraph 8). This rejection is respectfully traversed for the following reasons.

Applicant respectfully incorporates by reference in its entirety the Response filed October 4, 2006 to the non-final Office Action mailed July 25, 2006.

Independent claims 1, 8, 20, 28, 31, 32, and 39 all relate to, *inter alia*, a GGSN assigning one of a private network address and a public network address to a mobile station based on information contained in an APN field of an Activate PDP context request or a Create PDP Context Request message. The information contained in the APN field is transmitted by the requesting mobile terminal and explicitly indicates requesting one of a private network address and a public network address. As recognized in the Office Action, neither Bertrand nor Takeda, either separately or in combination, teaches or suggests such a feature. Neither Bertrand and Takeda teaches or suggests assignment of a private or a public network address be based on information in the APN field that explicitly indicates requesting one of a private network address and a public network address as requested by the mobile station. Neither Bertrand nor Takeda provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner suggested by the Applicant.

By way of example, claim 1 of the present application, as amended claims in part: “a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the GPRS-based communications network, the Activate PDP Context Request message having an APN field containing information that explicitly

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indicates requesting one of a private network address and a public network address.” Support for this amendment can be found in at least pages 13-14 of the present application (*see also* paragraph 40 of the present application, as published, U.S. Patent Application Publication No. US 2003 as 2003/0112793).

Claim 1 also claims “the SGSN sending a Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address.”

As recognized in the final Office Action (at pp. 3-4), Bertrand does not disclose that an Activate PDP Context Request message and a Create PDP Context Request have an APN field containing information relating to a request for one of a private network and a public network address.

As recognized in the final Office Action (at p. 4), Bertrand also does not disclose that the public network address or private network address is assigned based on information contained in the APN field of the Create PDP Context Request message.

The Office Action states that Takeda discloses an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address – specifically an APN field containing information identifying a destination network gateway node. There is, however, no teaching Takeda that the identification of this destination network gateway node includes an identification of whether the node is one of a private network address and a public network address.

Additionally in Takeda, it is the DHCP server that assigns the IP address to the mobile terminal, not the gateway node. P. 6, ¶ 95. Even so, Takeda does not teach or suggest that the DHCP, in allocating IP addresses, evaluates or receives any information contained in the APN relating to the mobile terminal’s request for one of a public network address or a private network address. Neither Bertrand nor Takeda provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner suggested by the Applicant. There is certainly no suggestion in either Bertrand or Takeda for an “Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address.”

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The Office Action states that it would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Takeda et al., to combine using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address, as suggested by Takeda et al., with the system and method of Bertrand et al., with the motivation being to allow address assignment to be based on the destination network that a mobile station is requesting to communicate with. It is not seen, however, where Bertrand or Takeda teaches any benefit in having an address assignment be based on a particular type of destination network address. Neither Bertrand nor Takeda teach any benefit in having an address assignment be one of a private network address and a public network address.

In short, Takeda does not provide a motivation to modify Bertrand to allow address assignment to be based on the type of destination network address. Takeda does not provide a motivation in having an address assignment be one of a private network address and a public network address. Bertrand or Takeda do not alone or in combination teach an “Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address” as claimed in independent claims 1, 8, 20, 32 and 39, as amended. Similarly, Bertrand or Takeda do not alone or in combination teach a “Create PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address” as claimed in independent claims 28 and 31, as amended (*see* paragraphs 40-41 of the present application, as published, U.S. Patent Application Publication No. US 2003.as 2003/0112793).

Absent motivation to modify Bertrand to allow address assignment to be based on the type of destination network address, there is certainly no motivation to further modify Bertrand to provide for an Activate or a Create PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address as claimed in independent claims 1, 8, 20, 28, 31, 32 and 39, as amended.

As recognized in the final Office Action, the teachings of Bertrand et al. and Takeda et al. do not disclose explicitly indicating one of a request for a private network address and a public network address (*see* page 18 of the final Office Action). The Office Action states that in the



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rejections Official Notice has been taken that explicitly indicating that one of a private network address and a public network address in a request is old and well known in the field of communications. The Office Action cites Applicant's alleged admitted prior art (paragraph 8), and "[n]ewly cited Publication Iyer (U.S. Publication US 2002/0116502)" as "proof that explicitly indicating one of a private network address and a public network address in a request is old and well known in the field of communications."

Paragraph 8 of applicant's application as published, as well as newly cited Iyer, describes the use of a Network Address Translator (NAT). As noted in the Response filed October 4, 2006, Applicant's Background of the Invention does not remedy the deficiencies in Bertrand and Takeda. Paragraph 8 (of the present application, published as U.S. Patent Application Publication 203/0112793) describes the use of a Network Address Translator (NAT). A NAT is used when a host that is assigned to a private address within an administrative domain intends to send an IP address (and possibly other selected fields within the datagram) into a public IP address prior to the IP datagram being sent outside the administrative domain associated with the NAT. A NAT transforms a private IP address (and possibly other selected fields within the datagram) into a public IP address prior to the IP datagram being sent outside the administrative domain associated with the NAT. Similarly, when an IP datagram is sent from a host that is outside the administrative domain associated with the NAT to a host with a private address, then the NAT transforms a public IP address to a private address.

A NAT does not conserve public IP addresses and simultaneously maintain end-to-end security and application friendliness. Indeed, as explained in paragraph 11 of the present application as published, there are two major drawbacks associated with the use of a NAT. The first major drawback is that the NAT-based approach breaks the end-to-end security model by changing the destination address of a datagram and thereby invalidating the authentication header of the datagram. The second major drawback is that certain types of applications cannot work in the presence of a NAT, unless remedial measures are taken, such as the inclusion of an application gateway (proxy). For example when an IP address is embedded into an application protocol unit (PDU), an ALG (Application Level Gateway) is required so that the embedded IP address is changed because a conventional NAT-based address assignment operation will not change the embedded IP address.

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As explained in paragraph 12 of the present application as published, in order to overcome the disadvantages associated with NATs, i.e., the security break and the “unfriendliness” toward some applications, a mechanism commonly referred to as Realm Specific IP (RSIP) has gained significant support within the Internet Engineering Task Force (IETF). As noted in paragraphs 13-17 of the present application, RSIP protocol makes use of a NAT unnecessary, and thereby avoids the drawbacks involving NATs.

As explained in paragraph 18 of the present application as published, in the case of a General Packet Radio System (GPRS) network or a GPRS-based network (such as a Universal Mobile Telecommunications System (UMTS)), a Mobile Station (MS) is assigned an IP address by a Gateway GPRS Support Node (GGSN). Currently, such an IP address is an IPv4 address. The protocol that is used for address assignment is specific to GPRS networks and is referred to as PDP Context Activation. PDP (Packet Data Protocol) is an acronym that is used within GPRS networks to refer to IP addresses, X.25 addresses, etc. An administrative domain within GPRS networks (and within cellular networks, in general) is referred to as a PLMN (Public Land Mobile Network).

As explained in paragraph 19 of the present application as published, FIG. 3 shows generic GPRS protocol stacks for a mobile station (MS), base station subsystem (BSS), Serving GPRS Support Node (SGSN) and the Gateway GPRS Support Node (GGSN). The IP address for the MS may be seen on the protocol stack for the MS.

As explained in paragraph 20 of the present application as published, FIGS. 4a-4d illustrate a conventional PDP (Packet Data Protocol) context activation sequence within a GPRS network. During the first step of a conventional PDP context activation shown in FIG. 4a, an MS sends an Activate PDP Context Request message to an SGSN through a BSS. The Activate PDP Context Request message contains appropriate information in the NSAPI, PDP type, PDP Addr, APN, QoS Req, and PDP Config Options in a well-known manner. In FIG. 4b, the SGSN sends a Create PDP Context Request message to a GGSN containing appropriate information in the PDP Type, PDP Addr, APN, QoS Negotiated, TID, Selection Mode, PDP Config Options fields. In FIG. 4c, the GGSN sends a Create PDP Context Response message to the SGSN containing appropriate information in the TID, PDP Addr, BB Protocol, Reordering Reqd, QoS Negot., PDP Config Options and Cause fields. In FIG. 4d, the SGSN then sends an Activate PDP Context

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Accept message to the MS containing appropriate information in the NSAPI, PDP Type, PDP Addr, QoS Req, Radio Priority Level and PDP Config Options field.

As explained in paragraph 21 of the present application as published, nevertheless, the GPRS standard does not specify whether private or public IP addresses are assigned to a requesting MS. Address assignment is not a standardization issue because a NAT is currently used at a PLMN boundary when private IP addresses are used. That is, current GPRS deployments rely on NATs at the GGSN when private addresses are assigned to a requesting MS. While this handles the problem of conserving IPv4 addresses, end-to-end security or application friendliness is not provided.

As noted in paragraph 22 of the present application as published, even though a conventional PDP context activation procedure within a GPRS network assigns an IPv4 address to a mobile station, what is needed is a technique for assigning an IPv4 address to a mobile station in a GPRS network or a GPRS-based network that conserves IPv4 addresses and simultaneously maintains end-to-end security and application friendliness.

The present application provides just such a technique, not heretofore available or provided or suggested by the prior art.

In view of the drawbacks involving NATs, and the teaching away of using NATs by using RSIP protocol, one of ordinary skill in the art would not be motivated to incorporate a NAT into a combination of Bertrand and Takeda to provide the present invention. Even if a NAT is incorporated into a combination of Bertrand and Takeda, the combination of the three references would not result in the present invention. A NAT does not involve an Activate or a Create PDP Context message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Rather, a NAT simply transforms a private IP address into a public IP address when a host intends to send an IP datagram to a host that is outside the administrative domain of the sending host.

Independent claims 1, 8, 20, 32, and 39 relate to, *inter alia*, information contained in the APN field of the Activate PDP Context Request message explicitly indicating one of a private network address and a public network address. Independent claims 28 and 31 relate to, *inter alia*, information contained in the APN field of the Create PDP Context Request message explicitly indicating one of a private network address and a public network address.

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As discussed on pages 13-14 of Applicant's specification (paragraph [40] as published), the inserted information (in the APN field) relating to whether a public or a private address assignment is desired can be an explicit indication, such as a particular bit (or bits) of the APN field being set. Neither Bertrand nor Takeda nor a NAT, separately or in combination, teaches or suggests such a feature. The Office Action even admits this deficiency of Bertrand and Takeda. Instead, the Office Action alleges that ¶¶ 26-27, 71-72, and 89-90 of Takeda disclose an "an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address." Even assuming the validity of such an allegation, merely containing information relating to a request is distinguishable from containing information in the APN field *explicitly indicating* one of a private network address and a public network address. Significantly, the cited passages only disclose an APN for identifying a gateway node. There is no teaching or suggestion that the APN field includes any explicit indicators of whether a private network address or a public network address is being requested.

The Office may not use Applicant's invention as a blueprint for combining distinct components/features found in Bertrand, Takeda, and a NAT as described in paragraph 8 of the present application (or newly cited Iyer). As such, claims 1, 8, 20, 28, 31, 32 and 39 are allowable for at least this reason.

Claims 2, 5-7, 9-14, 17-19, 21-27, 29, 30 and 35-37 are allowable for at least the same reasons as their respective base claims and further in view of the novel and non-obvious features recited therein.

***Additional Claim Rejections in view of fourth cited reference, Boudreaux***

Claims 7, 19, 27, 30 and 37 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand in view of Takeda and Applicant's alleged admitted prior art on NAT as applied to claims 1-6, 8-18, 20-26, 28-29, 31-36 and 39 above, and further in view of Boudreaux (U.S. Patent No. 6,466,556). This rejection is respectfully traversed for the following reasons.

Claims 7, 19, 27, 30 and 37 all relate to a GPRS-based communications network that is a Universal Mobile Telecommunications System. The Office Action concedes that Bertrand and Takeda and Applicant's alleged admitted prior art does not disclose such a feature. While

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Boudreaux may teach a Universal Mobile Telecommunications System, it does not remedy the failure of Bertrand, Takeda, and paragraph 8 of Applicant's specification regarding alleged prior art (or newly cited Iyer) to teach the claimed invention of the independent claims upon which 7, 19, 27, 30 and 37 depend from. As such, claims 7, 19, 27, 30 and 37 are allowable for over the proposed combination of Bertrand, Takeda, Applicant's alleged admitted prior art regarding NAP (or newly cited Iyer), and Boudreaux.

### CONCLUSION

All rejections having been addressed, Applicants respectfully submit that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. However, if for any reason the Examiner believes the application is not in condition for allowance or there are any questions, the Examiner is requested to contact the undersigned at (312) 463-5405.

Respectfully submitted,

Dated: January 23, 2007

By: /Robert H. Resis/

Robert H. Resis  
Registration No. 32,168  
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10 South Wacker Drive, Suite 3000  
Chicago, IL 60606  
Direct Dial: 312-463-5405

**Electronic Acknowledgement Receipt**

<b>EFS ID:</b>	1458468
<b>Application Number:</b>	10017398
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	8170
<b>Title of Invention:</b>	Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security
<b>First Named Inventor/Applicant Name:</b>	Senthil Sengodan
<b>Customer Number:</b>	22908
<b>Filer:</b>	Robert H. Resis/Alma Bahena
<b>Filer Authorized By:</b>	Robert H. Resis
<b>Attorney Docket Number:</b>	005288.00014
<b>Receipt Date:</b>	23-JAN-2007
<b>Filing Date:</b>	18-DEC-2001
<b>Time Stamp:</b>	14:38:34
<b>Application Type:</b>	Utility

**Payment information:**

Submitted with Payment	no
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**File Listing:**

<b>Document Number</b>	<b>Document Description</b>	<b>File Name</b>	<b>File Size(Bytes)</b>	<b>Multi Part /.zip</b>	<b>Pages (if appl.)</b>
1		Amendment14.pdf	1231542	yes	19

## Multipart Description/PDF files in .zip description

	Document Description	Start	End
	Amendment After Final	1	1
	Claims	2	11
	Applicant Arguments/Remarks Made in an Amendment	12	19

**Warnings:****Information:****Total Files Size (in bytes):**

1231542

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

# **PATENT APPLICATION FEE DETERMINATION RECORD** Effective October 1, 2001

Application / Docket Number

10017398

005288.0000

## **CLAIMS AS FILED - PART I**

(Column 1)

(Column 2)

SMALL ENTITY  
TYPE ☐OR  
OTHER THAN  
SMALL ENTITY

TOTAL CLAIMS	38	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	38 minus 20 =	18
INDEPENDENT CLAIMS	7 minus 3 =	4
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

RATE	FEE
BASIC FEE	370.00
X50=	
X42=	
+140=	
TOTAL	

RATE	FEE
BASIC FEE	740.00
X510=	324
X54=	336
+280=	
TOTAL	1,400

\* If the difference in column 1 is less than zero, enter "0" in column 2

## **CLAIMS AS AMENDED - PART II**

(Column 1)

(Column 2)

(Column 3)

SMALL ENTITY

OR  
OTHER THAN  
SMALL ENTITY

1/20/16

CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	38	38
Independent	7	7
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>		

RATE	ADDITIONAL FEE
X50=	
X42=	
+140=	
TOTAL ADDITIONAL FEE	

RATE	ADDITIONAL FEE
X510=	
X54=	
+280=	
TOTAL ADDITIONAL FEE	

10/4/16

CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	38	38
Independent	7	7
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>		

RATE	ADDITIONAL FEE
X50=	
X42=	
+140=	
TOTAL ADDITIONAL FEE	

RATE	ADDITIONAL FEE
X510=	
X54=	
+280=	
TOTAL ADDITIONAL FEE	

1/23/07

CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	30	38
Independent	7	7
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>		

RATE	ADDITIONAL FEE
X50=	
X42=	
+140=	
TOTAL ADDITIONAL FEE	

RATE	ADDITIONAL FEE
X510=	
X54=	
+280=	
TOTAL ADDITIONAL FEE	

\* If the entry in column 1 is less than the entry in column 2, enter "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" in THIS SPACE is less than 20, enter "20."  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS OFFICE is less than 3, enter "3."  
 The "Highest Number Previously Paid For" (Total or Independent) is the Highest Number found in the appropriate box in column 1.





## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
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 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,398	12/18/2001	Senthil Sengodan	005288.00014	8170

22908 7590 02/16/2007  
 BANNER & WITCOFF, LTD.  
 TEN SOUTH WACKER DRIVE  
 SUITE 3000  
 CHICAGO, IL 60606

EXAMINER
----------

MATTIS, JASON E

ART UNIT	PAPER NUMBER
----------	--------------

2616

MAIL DATE	DELIVERY MODE
-----------	---------------

02/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Advisory Action</b> <b>Before the Filing of an Appeal Brief</b>	Application No. 10/017,398	Applicant(s) SENGODAN, SENTHIL	
	Examiner Jason E. Mattis	Art Unit 2616	

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 23 January 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.  
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

#### AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet. (See 37 CFR 1.116 and 41.33(a)).


4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: \_\_\_\_\_.  
Claim(s) objected to: \_\_\_\_\_.  
Claim(s) rejected: 1-37 and 39.  
Claim(s) withdrawn from consideration: \_\_\_\_\_.

#### AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

#### REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_.  
13. ☐ Other: \_\_\_\_\_.

  
**HUY D. VU**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2500**

**Continuation Sheet (PTO-303)**

**Application No. 10/017,398**

Continuation of 3. NOTE: The new limitation that the APN field contains information "that explicitly indicates requesting one of a private network address and a public network address" requires an additional search.

Continuation of 11. does NOT place the application in condition for allowance because: The arguments are persuasive; however, they are based on a new claim limitation that requires a further search of the prior art.

PTO/SB/30 (09-06)

Approved for use through 03/31/2007. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

# Request for Continued Examination (RCE) Transmittal

Address to:  
Mail Stop RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Application Number	10/017,398
Filing Date	12/18/2001
First Named Inventor	Senthil Sengodan
Art Unit	2616
Examiner Name	Mattis, Jason E.
Attorney Docket Number	005288.00014

## This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

- Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

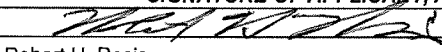
  - ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
    - ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_
    - ☐ Other \_\_\_\_\_
  - ☒ Enclosed
    - ☒ Amendment/Reply
    - ☐ Affidavit(s)/ Declaration(s)
    - ☐ Information Disclosure Statement (IDS)
    - ☐ Other \_\_\_\_\_
- Miscellaneous**

  - ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of \_\_\_\_\_ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
  - ☐ Other \_\_\_\_\_
- Fees** The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed. The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 19-0733. I have enclosed a duplicate copy of this sheet.

  - ☒
    - ☒ RCE fee required under 37 CFR 1.17(e)
    - ☐ Extension of time fee (37 CFR 1.136 and 1.17)
    - ☐ Other \_\_\_\_\_
  - ☐ Check in the amount of \$ \_\_\_\_\_ enclosed
  - ☐ Payment by credit card (Form PTO-2038 enclosed)

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature		Date	03/05/2007
Name (Print/Type)	Robert H. Resis	Registration No.	32,168

### CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature		Date	
Name (Print/Type)		Date	

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Appln. No. 10/017,398

Amendment dated March 5, 2007

Reply to Office Action of February 16, 2007

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

(Attorney Docket No. 005288.00014)

In re U.S. Patent Application of	)	
Senthil SENGODAN	)	
	)	Art Unit: 2616
Application No. 10/017,398	)	
	)	Examiner: Mattis, Jason E.
Filed: December 18, 2001	)	
	)	Confirmation No. 8170
For: Method and Apparatus for Address	)	
Allocation in GPRS Networks that	)	
Facilitates End-To-End Security	)	

**AMENDMENT AND RESPONSE**

Mail Stop RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

Sir:

This paper is responsive to the Advisory Action dated February 16, 2007. The Office Action set a three-month period for response, thus making this paper due on or before **March 14, 2007**. The Commissioner is hereby authorized to charge any fee or credit any overpayment of fee to Deposit Account No. 19-0733.

**Amendments to the Claims** are reflected in the Listing of Claims, which begins on page 2 of this paper.

**Remarks/Arguments** begin on page 12 of this paper.

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### REMARKS/ARGUMENTS

The Office Action of December 14, 2006, has been carefully reviewed and these remarks are responsive thereto. Independent claims 1, 8, 20, 28, 31, 32, and 39 have been amended. Claims 3-4, 15-16, 33-34 and 38 have been cancelled. Claims 1-2, 5-14, 17-22, 25-32, 35-37 and 39 remain pending and allowance of the instant application are respectfully requested.

#### *Claim Rejections Under 35 U.S.C. §103(a)*

Claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand *et al.* (U.S. patent No. 6,687,252, hereinafter “Bertrand”) in view of Takeda *et al.* (U.S. Publication No. US 2001/0048686 A1) and further in view of Applicant’s alleged admitted prior art (as found in Applicant’s specification at paragraph 8). This rejection is respectfully traversed for the following reasons.

Applicant respectfully incorporates by reference in its entirety the Response filed October 4, 2006 to the non-final Office Action mailed July 25, 2006.

Independent claims 1, 8, 20, 28, 31, 32, and 39 all relate to, *inter alia*, a GGSN assigning one of a private network address and a public network address to a mobile station based on information contained in an APN field of an Activate PDP context request or a Create PDP Context Request message. The information contained in the APN field is transmitted by the requesting mobile terminal and explicitly indicates requesting one of a private network address and a public network address. As recognized in the Office Action, neither Bertrand nor Takeda, either separately or in combination, teaches or suggests such a feature. Neither Bertrand and Takeda teaches or suggests assignment of a private or a public network address be based on information in the APN field that explicitly indicates requesting one of a private network address and a public network address as requested by the mobile station. Neither Bertrand nor Takeda provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner suggested by the Applicant.

By way of example, claim 1 of the present application, as amended claims in part: “a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the network, the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a

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private network address and a public network address.” Support for this amendment can be found in at least pages 13-14 of the present application (*see also* paragraph 40 of the present application, as published, U.S. Patent Application Publication No. US 2003 as 2003/0112793).

Claim 1 also claims “the SGSN sending a Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address.”

As recognized in the final Office Action (at pp. 3-4), Bertrand does **not** disclose that an Activate PDP Context Request message and a Create PDP Context Request have an APN field containing information relating to a request for one of a private network and a public network address.

As recognized in the final Office Action (at p. 4), Bertrand also does **not** disclose that the public network address or private network address is assigned based on information contained in the APN field of the Create PDP Context Request message.

The Office Action states that Takeda discloses an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address – specifically an APN field containing information identifying a destination network gateway node. There is, however, **no** teaching Takeda that the identification of this destination network gateway node includes an identification of whether the node is one of a private network address and a public network address.

Additionally in Takeda, it is the DHCP server that assigns the IP address to the mobile terminal, not the gateway node. P. 6, ¶ 95. Even so, Takeda does not teach or suggest that the DHCP, in allocating IP addresses, evaluates or receives any information contained in the APN relating to the mobile terminal’s request for one of a public network address or a private network address. Neither Bertrand nor Takeda provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner suggested by the Applicant. There is certainly no suggestion in either Bertrand or Takeda for an “Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address.”



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The Office Action states that it would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Takeda et al., to combine using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address, as suggested by Takeda et al., with the system and method of Bertrand et al., with the motivation being to allow address assignment to be based on the destination network that a mobile station is requesting to communicate with. It is not seen, however, where Bertrand or Takeda teaches any benefit in having an address assignment be based on a particular type of destination network address. Neither Bertrand nor Takeda teach any benefit in having an address assignment be one of a private network address and a public network address.

In short, Takeda does not provide a motivation to modify Bertrand to allow address assignment to be based on the type of destination network address. Takeda does not provide a motivation in having an address assignment be one of a private network address and a public network address. Bertrand or Takeda do not alone or in combination teach an “Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address” as claimed in independent claims 1, 8, 20, 32 and 39, as amended. Similarly, Bertrand or Takeda do not alone or in combination teach a “Create PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address” as claimed in independent claims 28 and 31, as amended (*see* paragraphs 40-41 of the present application, as published, U.S. Patent Application Publication No. US 2003.012793).

Absent motivation to modify Bertrand to allow address assignment to be based on the type of destination network address, there is certainly no motivation to further modify Bertrand to provide for an Activate or a Create PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address as claimed in independent claims 1, 8, 20, 28, 31, 32 and 39, as amended.

As recognized in the final Office Action, the teachings of Bertrand et al. and Takeda et al. do not disclose explicitly indicating one of a request for a private network address and a public network address (*see* page 18 of the final Office Action). The Office Action states that in the



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rejections Official Notice has been taken that explicitly indicating that one of a private network address and a public network address in a request is old and well known in the field of communications. The Office Action cites Applicant's alleged admitted prior art (paragraph 8), and "[n]ewly cited Publication Iyer (U.S. Publication US 2002/0116502)" as "proof that explicitly indicating one of a private network address and a public network address in a request is old and well known in the field of communications."

Paragraph 8 of applicant's application as published, as well as newly cited Iyer, describes the use of a Network Address Translator (NAT). As noted in the Response filed October 4, 2006, Applicant's Background of the Invention does not remedy the deficiencies in Bertrand and Takeda. Paragraph 8 (of the present application, published as U.S. Patent Application Publication 203/0112793) describes the use of a Network Address Translator (NAT). A NAT is used when a host that is assigned to a private address within an administrative domain intends to send an IP address (and possibly other selected fields within the datagram) into a public IP address prior to the IP datagram being sent outside the administrative domain associated with the NAT. A NAT transforms a private IP address (and possibly other selected fields within the datagram) into a public IP address prior to the IP datagram being sent outside the administrative domain associated with the NAT. Similarly, when an IP datagram is sent from a host that is outside the administrative domain associated with the NAT to a host with a private address, then the NAT transforms a public IP address to a private address.

A NAT does not conserve public IP addresses and simultaneously maintain end-to-end security and application friendliness. Indeed, as explained in paragraph 11 of the present application as published, there are two major drawbacks associated with the use of a NAT. The first major drawback is that the NAT-based approach breaks the end-to-end security model by changing the destination address of a datagram and thereby invalidating the authentication header of the datagram. The second major drawback is that certain types of applications cannot work in the presence of a NAT, unless remedial measures are taken, such as the inclusion of an application gateway (proxy). For example when an IP address is embedded into an application protocol unit (PDU), an ALG (Application Level Gateway) is required so that the embedded IP address is changed because a conventional NAT-based address assignment operation will not change the embedded IP address.

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As explained in paragraph 12 of the present application as published, in order to overcome the disadvantages associated with NATs, i.e., the security break and the “unfriendliness” toward some applications, a mechanism commonly referred to as Realm Specific IP (RSIP) has gained significant support within the Internet Engineering Task Force (IETF). As noted in paragraphs 13-17 of the present application, RSIP protocol makes use of a NAT unnecessary, and thereby avoids the drawbacks involving NATs.

As explained in paragraph 18 of the present application as published, in the case of a General Packet Radio System (GPRS) network or a GPRS-based network (such as a Universal Mobile Telecommunications System (UMTS)), a Mobile Station (MS) is assigned an IP address by a Gateway GPRS Support Node (GGSN). Currently, such an IP address is an IPv4 address. The protocol that is used for address assignment is specific to GPRS networks and is referred to as PDP Context Activation. PDP (Packet Data Protocol) is an acronym that is used within GPRS networks to refer to IP addresses, X.25 addresses, etc. An administrative domain within GPRS networks (and within cellular networks, in general) is referred to as a PLMN (Public Land Mobile Network).

As explained in paragraph 19 of the present application as published, FIG. 3 shows generic GPRS protocol stacks for a mobile station (MS), base station subsystem (BSS), Serving GPRS Support Node (SGSN) and the Gateway GPRS Support Node (GGSN). The IP address for the MS may be seen on the protocol stack for the MS.

As explained in paragraph 20 of the present application as published, FIGS. 4a-4d illustrate a conventional PDP (Packet Data Protocol) context activation sequence within a GPRS network. During the first step of a conventional PDP context activation shown in FIG. 4a, an MS sends an Activate PDP Context Request message to an SGSN through a BSS. The Activate PDP Context Request message contains appropriate information in the NSAPI, PDP type, PDP Addr, APN, QoS Req, and PDP Config Options in a well-known manner. In FIG. 4b, the SGSN sends a Create PDP Context Request message to a GGSN containing appropriate information in the PDP Type, PDP Addr, APN, QoS Negotiated, TID, Selection Mode, PDP Config Options fields. In FIG. 4c, the GGSN sends a Create PDP Context Response message to the SGSN containing appropriate information in the TID, PDP Addr, BB Protocol, Reordering Req, QoS Negot., PDP Config Options and Cause fields. In FIG. 4d, the SGSN then sends an Activate PDP Context

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Accept message to the MS containing appropriate information in the NSAPI, PDP Type, PDP Addr, QoS Req, Radio Priority Level and PDP Config Options field.

As explained in paragraph 21 of the present application as published, nevertheless, the GPRS standard does not specify whether private or public IP addresses are assigned to a requesting MS. Address assignment is not a standardization issue because a NAT is currently used at a PLMN boundary when private IP addresses are used. That is, current GPRS deployments rely on NATs at the GGSN when private addresses are assigned to a requesting MS. While this handles the problem of conserving IPv4 addresses, end-to-end security or application friendliness is not provided.

As noted in paragraph 22 of the present application as published, even though a conventional PDP context activation procedure within a GPRS network assigns an IPv4 address to a mobile station, what is needed is a technique for assigning an IPv4 address to a mobile station in a GPRS network or a GPRS-based network that conserves IPv4 addresses and simultaneously maintains end-to-end security and application friendliness.

The present application provides just such a technique, not heretofore available or provided or suggested by the prior art.

In view of the drawbacks involving NATs, and the teaching away of using NATs by using RSIP protocol, one of ordinary skill in the art would not be motivated to incorporate a NAT into a combination of Bertrand and Takeda to provide the present invention. Even if a NAT is incorporated into a combination of Bertrand and Takeda, the combination of the three references would not result in the present invention. A NAT does not involve an Activate or a Create PDP Context message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Rather, a NAT simply transforms a private IP address into a public IP address when a host intends to send an IP datagram to a host that is outside the administrative domain of the sending host.

Independent claims 1, 8, 20, 32, and 39 relate to, *inter alia*, information contained in the APN field of the Activate PDP Context Request message explicitly indicating one of a private network address and a public network address. Independent claims 28 and 31 relate to, *inter alia*, information contained in the APN field of the Create PDP Context Request message explicitly indicating one of a private network address and a public network address.

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As discussed on pages 13-14 of Applicant's specification (paragraph [40] as published), the inserted information (in the APN field) relating to whether a public or a private address assignment is desired can be an explicit indication, such as a particular bit (or bits) of the APN field being set. Neither Bertrand nor Takeda nor a NAT, separately or in combination, teaches or suggests such a feature. The Office Action even admits this deficiency of Bertrand and Takeda. Instead, the Office Action alleges that ¶¶ 26-27, 71-72, and 89-90 of Takeda disclose an "an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address." Even assuming the validity of such an allegation, merely containing information relating to a request is distinguishable from containing information in the APN field *explicitly indicating* one of a private network address and a public network address. Significantly, the cited passages only disclose an APN for identifying a gateway node. There is no teaching or suggestion that the APN field includes any explicit indicators of whether a private network address or a public network address is being requested.

The Office may not use Applicant's invention as a blueprint for combining distinct components/features found in Bertrand, Takeda, and a NAT as described in paragraph 8 of the present application (or newly cited Iyer). As such, claims 1, 8, 20, 28, 31, 32 and 39 are allowable for at least this reason.

Claims 2, 5-7, 9-14, 17-19, 21-27, 29, 30 and 35-37 are allowable for at least the same reasons as their respective base claims and further in view of the novel and non-obvious features recited therein.

***Additional Claim Rejections in view of fourth cited reference, Boudreaux***

Claims 7, 19, 27, 30 and 37 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand in view of Takeda and Applicant's alleged admitted prior art on NAT as applied to claims 1-6, 8-18, 20-26, 28-29, 31-36 and 39 above, and further in view of Boudreaux (U.S. Patent No. 6,466,556). This rejection is respectfully traversed for the following reasons.

Claims 7, 19, 27, 30 and 37 all relate to a GPRS-based communications network that is a Universal Mobile Telecommunications System. The Office Action concedes that Bertrand and Takeda and Applicant's alleged admitted prior art does not disclose such a feature. While

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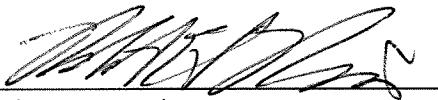
Boudreaux may teach a Universal Mobile Telecommunications System, it does not remedy the failure of Bertrand, Takeda, and paragraph 8 of Applicant's specification regarding alleged prior art (or newly cited Iyer) to teach the claimed invention of the independent claims upon which 7, 19, 27, 30 and 37 depend from. As such, claims 7, 19, 27, 30 and 37 are allowable for over the proposed combination of Bertrand, Takeda, Applicant's alleged admitted prior art regarding NAP (or newly cited Iyer), and Boudreaux.

**CONCLUSION**

All rejections having been addressed, Applicants respectfully submit that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. However, if for any reason the Examiner believes the application is not in condition for allowance or there are any questions, the Examiner is requested to contact the undersigned at (312) 463-5405.

Respectfully submitted,

Dated: March 5, 2007

By:   
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## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	10017398			
<b>Filing Date:</b>	18-Dec-2001			
<b>Title of Invention:</b>	Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security			
First Named Inventor/Applicant Name:	Senthil Sengodan			
<b>Filer:</b>	Robert H. Resis/Alma Bahena			
<b>Attorney Docket Number:</b>	005288.00014			
Filed as Large Entity				
<b>Utility      Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
Post-Allowance-and-Post-Issuance:				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
Request for continued examination	1801	1	790	790
<b>Total in USD (\$)</b>				<b>790</b>

**Electronic Acknowledgement Receipt**

<b>EFS ID:</b>	1563358
<b>Application Number:</b>	10017398
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	8170
<b>Title of Invention:</b>	Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security
<b>First Named Inventor/Applicant Name:</b>	Senthil Sengodan
<b>Customer Number:</b>	22908
<b>Filer:</b>	Robert H. Resis/Alma Bahena
<b>Filer Authorized By:</b>	Robert H. Resis
<b>Attorney Docket Number:</b>	005288.00014
<b>Receipt Date:</b>	05-MAR-2007
<b>Filing Date:</b>	18-DEC-2001
<b>Time Stamp:</b>	12:58:59
<b>Application Type:</b>	Utility

**Payment information:**

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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 and 1.17	

**File Listing:**



Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)				
1		RCE14.pdf	1431469	yes	20				
	<b>Multipart Description/PDF files in .zip description</b>								
	<b>Document Description</b>		<b>Start</b>	<b>End</b>					
	Request for Continued Examination (RCE)		1	1					
	Amendment - After Non-Final Rejection		2	2					
	Claims		3	12					
	Applicant Arguments/Remarks Made in an Amendment		13	20					
<b>Warnings:</b>									
<b>Information:</b>									
2	Fee Worksheet (PTO-06)	fee-info.pdf	8214	no	2				
<b>Warnings:</b>									
<b>Information:</b>									
<b>Total Files Size (in bytes):</b>			1439683						
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>									

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This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A ~~General Packet Radio System (GPRS)~~ based communications network comprising:

a Serving General Packet Radio System (GPRS) Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the ~~GPRS-based communications~~ network, the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting relating to a request for one of a private network address and a public network address; and

a Gateway General Packet Radio System (GPRS) Support Node (GGSN) of the ~~GPRS-based communications~~ network,

the SGSN sending a Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address,

the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message, and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message,

the SGSN sending an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message, the Activate PDP Context Accept message containing information assigning one of a private network address and a public network address to the

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mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

2. (Currently Amended) The ~~GPRS-based communications~~ network according to claim 1, wherein the mobile station receives the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended) The ~~GPRS-based communications~~ network according to claim 1, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

6. (Currently Amended) The ~~GPRS-based communications~~ network according to claim 1, wherein the ~~GPRS-based communications~~ network is a General Packet Radio System (GPRS) communications network.

7. (Currently Amended) The ~~GPRS-based communications~~ network according to claim 1, wherein the ~~GPRS-based communications~~ network is a Universal Mobile Telecommunications System.

8. (Currently Amended) A method ~~for assigning a network address in a General Packet Radio System (GPRS)-based communications network~~, the method comprising:

receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving General Packet Radio System (GPRS) Support Node (SGSN) of the ~~GPRS-based communications~~ network from a mobile station of the ~~GPRS-based communications~~ network, the

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Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting ~~relating to a request for~~ one of a private network address and a public network address; and

sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

9. (Currently Amended) The method according to claim 8, further comprising steps of:

sending a Create PDP Context Request message from the SGSN to a Gateway General Packet Radio System (GPRS) Support Node (GGSN) of the ~~GPRS-based communications~~ network, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

receiving a Create PDP Context Response message from the GGSN containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

10. (Original) The method according to claim 9, further comprising steps of:

receiving the Create PDP Context Request message from the SGSN at the GGSN;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

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sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

11. (Currently Amended) The method according to claim 8, further comprising steps of:

sending a Create PDP Context Request message from the SGSN to a Border Gateway (BG) of the ~~GPRS-based communications~~ network, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address; and

receiving a Create PDP Context Response message at the SGSN from the BG containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

12. (Original) The method according to claim 11, further comprising steps of:

receiving the Create PDP Context Request message at the BG;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

sending the Create PDP Context Response message to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

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13. (Currently Amended) The method according to claim 12, further comprising steps of:

sending the Create PDP Context Request message from the SGSN to a Gateway General Packet Radio System (GPRS) Support Node (GGSN) of the ~~GPRS-based communications~~ network;

sending the Create PDP Context Request message from the GGSN to the BG;

receiving the Create PDP Context Response message at the GGSN from the BG; and

receiving the Create PDP Context Response message at the SGSN from the GGSN.

14. (Original) The method according to claim 8, further comprising a step receiving at the mobile station the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

15. (Cancelled)

16. (Cancelled)

17. (Original) The method according to claim 8, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

18. (Currently Amended) The method according to claim 8, wherein the ~~GPRS-based communications~~ network is a GPRS communications network.

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19. (Currently Amended) The method according to claim 8, wherein the ~~GPRS-based communications~~ network is a Universal Mobile Telecommunications System.

20. (Currently Amended) A ~~General Packet Radio System (GPRS)-based communications~~ network comprising:

a Serving General Packet Radio System (GPRS) Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the ~~GPRS-based communications~~ network, the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting ~~relating to a request for~~ one of a private network address and a public network address; and

a Border Gateway (BG) of the ~~GPRS-based communications~~ network,

the SGSN sending a Create PDP Context Request message from the SGSN to the BG in response to the Activate PDP Protocol Context Request, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address,

the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message, and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message,

the SGSN sending an Activate PDP Context Accept message to the mobile station in response to the Create PDP Context Response message, the Activate PDP Context Accept message containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

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21. (Currently Amended) The ~~GPRS-based communications~~ network according to claim 20, further comprising a Gateway General Packet Radio System (GPRS) Support Node (GGSN), and

wherein the SGSN sending the Create PDP Context Request message from the SGSN to the GGSN in response to the Activate PDP Protocol Context Request,

wherein the GGSN sending the Create PDP Context Request message from the GGSN to the BG, and

wherein the BG sends the Create PDP Context Response message from the BG to the GGSN and the GGSN sends the Create PDP Context Response message from the GGSN to the SGSN.

22. (Currently Amended) The ~~GPRS-based communications~~ network according to claim 20, wherein the mobile station receives the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

23. (Cancelled)

24. (Cancelled)

25. (Currently Amended) The ~~GPRS-based communications~~ network according to claim 20, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

26. (Currently Amended) The ~~GPRS-based communications~~ network according to claim 20, wherein the ~~GPRS-based communications~~ network is a GPRS communications network.



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27. (Currently Amended) The ~~GPRS-based communications~~ network according to claim 20, wherein the ~~GPRS-based communications~~ network is a Universal Mobile Telecommunications System.

28. (Currently Amended) A method ~~for assigning a network address in a General Packet Radio System (GPRS)-based communications network, the method~~ comprising:

receiving a Create Packet Data Protocol (PDP) Context Request message from a Serving General Packet Radio System (GPRS) Support Node (SGSN) at a Gateway General Packet Radio System (GPRS) Support Node (GGSN), the Create PDP Context Request Message having an APN field containing information that explicitly indicates requesting relating to a request for one of a private network address and a public network address for a mobile station of the ~~GPRS-based communications network~~;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

29. (Currently Amended) The method according to claim 28, wherein the ~~GPRS-based communications~~ network is a GPRS communications network.

30. (Currently Amended) The method according to claim 28, wherein the ~~GPRS-based communications~~ network is a Universal Mobile Telecommunications System.

31. (Currently Amended) A method ~~for assigning a network address in a General Packet Radio System (GPRS)-based communications network, the method~~ comprising:

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receiving a Create Packet Data Protocol (PDP) Context Request message from a Serving General Packet Radio System (GPRS) Support Node (SGSN) at Border Gateway (BG), the Create PDP Context Request Message having an APN field containing information that explicitly indicates requesting relating to a request for one of a private network address and a public network address for a mobile station of the ~~GPRS-based communications~~ network;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the BG to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

32. (Currently Amended) A method ~~for requesting an assignment of a network address in a General Packet Radio System (GPRS) based communications network, the method~~ comprising:

sending an Activate Packet Data Protocol (PDP) Context Request message to a Serving General Packet Radio System (GPRS) Support Node (SGSN) of the ~~GPRS-based communications~~ network from a mobile station of the ~~GPRS-based communications~~ network, the Activate PDP Context Request message having an APN field containing information containing information that explicitly indicates requesting relating to a request for one of a private network address and a public network address; and

receiving at the mobile station an Activate PDP Context Accept message containing information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

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33. (Cancelled)

34. (Cancelled)

35. (Original) The method according to claim 32, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

36. (Currently Amended) The method according to claim 32, wherein the ~~GPRS-based communications network~~ is a GPRS communications network.

37. (Currently Amended) The method according to claim 32, wherein the ~~GPRS-based communications network~~ is a Universal Mobile Telecommunications System.

38. (Cancelled)

39. (Currently Amended) A method ~~for assigning a network address in a General Packet Radio System (GPRS) based communications network~~, the method comprising:

receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving General Packet Radio System (GPRS) Support Node (SGSN) of the ~~GPRS-based communications network~~ from a mobile station of the ~~GPRS-based communications network~~, the Activate PDP Context Request message having an APN field containing one or more parameters that explicitly indicates requesting indicating a type of requested network address, ~~wherein the type is one of a private network address and a public network address; and~~

sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address to the mobile station based on the one or more parameters indicating the type of requested network address contained in the APN field of the Activate PDP Context Request message.

PTO/SB/06 (08-03)

Approved for use through 7/31/2006. OMB 0651-0032  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE**PATENT APPLICATION FEE DETERMINATION RECORD**  
Substitute for Form PTO-875Application or Docket Number  
10/017398**CLAIMS AS FILED - PART I**

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a))		
TOTAL CLAIMS (37 CFR 1.16(c))		minus 20 =
INDEPENDENT CLAIMS (37 CFR 1.16(b))		minus 3 =
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(d))		

\* If the difference in column 1 is less than zero, enter "0" in column 2.

**SMALL ENTITY**

RATE	FEE
	\$
X \$	=
X \$	=
+ \$	=
TOTAL	

OR

**OTHER THAN SMALL ENTITY**

RATE	FEE
	\$
X \$	=
X \$	=
+ \$	=
TOTAL	

**CLAIMS AS AMENDED - PART II**

3/5/07

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT	(Column 2) MINUS	(Column 3) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 4) PRESENT EXTRA
Total (37 CFR 1.16(c))	30	Minus	38	=
Independent (37 CFR 1.16(b))	7	Minus	7	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))				

**SMALL ENTITY**

RATE	ADDITIONAL FEE
X \$	=
X \$	=
+ \$	=
TOTAL ADD'L FEE	

OR

**OTHER THAN SMALL ENTITY**

RATE	ADDITIONAL FEE
X \$	=
X \$	=
+ \$	=
TOTAL ADD'L FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT	(Column 2) MINUS	(Column 3) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 4) PRESENT EXTRA
Total (37 CFR 1.16(c))		Minus		=
Independent (37 CFR 1.16(b))		Minus		=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))				

RATE	ADDITIONAL FEE
X \$	=
X \$	=
+ \$	=
TOTAL ADD'L FEE	

OR

RATE	ADDITIONAL FEE
X \$	=
X \$	=
+ \$	=
TOTAL ADD'L FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT	(Column 2) MINUS	(Column 3) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 4) PRESENT EXTRA
Total (37 CFR 1.16(c))		Minus		=
Independent (37 CFR 1.16(b))		Minus		=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))				

RATE	ADDITIONAL FEE
X \$	=
X \$	=
+ \$	=
TOTAL ADD'L FEE	

OR

RATE	ADDITIONAL FEE
X \$	=
X \$	=
+ \$	=
TOTAL ADD'L FEE	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



## UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,398	12/18/2001	Senthil Sengodan	005288.00014	8170
22908 7590 05/25/2007 BANNER & WITCOFF, LTD. TEN SOUTH WACKER DRIVE SUITE 3000 CHICAGO, IL 60606			EXAMINER MATTIS, JASON E	
			ART UNIT	PAPER NUMBER
			2616	
			MAIL DATE	DELIVERY MODE
			05/25/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

5

**Office Action Summary****Application No.**

10/017,398

**Applicant(s)**

SENGODAN, SENTHIL

**Examiner**

Jason E. Mattis

**Art Unit**

2616

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-14,17-22,25-32,35-37 and 39 is/are pending in the application.
- 4a) Of the above claim(s), \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-14, 17-22, 25-32, 35-37, and 39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

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### **DETAILED ACTION**

1. This Office Action is in response to the Request for Continued Examination filed 3/5/07. Claims 3, 4, 15, 16, 23, 24, 33, 34, and 38 have been cancelled. Claims 1, 2, 5-14, 17-22, 25-32, 35-37, and 39 are currently pending in the application.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8, 32, and 39 each recite the limitation "the network" (See lines 4-5 of claim 8, lines 5-6 of claim 32, and lines 4-5 of claim 39). There is insufficient antecedent basis for this limitation in the claim. It is recommended that the first instance of the phrase "the network" be changed to "a network" in each of these claims.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 5, 6, 8-14, 17, 18, 20-22, 25, 26, 28-29, 31, 32, 35, 36, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al. (U.S. Pat. 6687252 B1) in view of Takeda et al. (U.S. Publication US 2001/0048686 A1) and in further view of Applicant's admitted prior (as found in the Applicant's specification).

**With respect to claim 1, Bertrand et al. discloses a network (See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a GPRS network).** Bertrand et al. also discloses a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the network **(See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activated PDP Context Request message to a SGSN).** Bertrand et al. further discloses the SGSN sending a Create PDP Context Request message to a Gateway GPRS Support Node (GGSN) in response to the Activate PDP Context Request **(See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request).** Bertrand et al. also discloses the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP**



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**address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address).** Bertrand et al. further discloses the SGSN sending an Activate PDP Context Accept message containing information assigning the address to the mobile station in response to the Create PDP Context Response message (**See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message in response to the SGSN receiving the Create PDP Context Response message).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 8 and 32, Bertrand et al. discloses a method (See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network).** Bertrand et al. also discloses receiving an Activate PDP Context Request message at a SGSN from a mobile station (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN).** Bertrand et al. further

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discloses sending an Activate PDP Context Accept message to the mobile station containing information assigning an address to the mobile station (**See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message**).

Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 20, Bertrand et al. discloses a network (See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a GPRS network).**

Bertrand et al. also discloses a Serving GPRS Support Node (SGSN) receiving an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of the network (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN**). Bertrand et al. further discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request (**See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context**

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**Request).** Bertrand et al. also discloses the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).** Bertrand et al. further discloses the SGSN sending an Activate PDP Context Accept message containing information assigning the address to the mobile station in response to the Create PDP Context Response message **(See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message in response to the SGSN receiving the Create PDP Context Response message).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

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**With respect to claim 28, Bertrand et al. discloses a method (See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network).** Bertrand et al. also discloses receiving a Create PDP Context Request message from a SGSN at a GGSN **(See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN).** Bertrand et al. further discloses assigning one of a private network address and a public network address to the mobile station and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 31, Bertrand et al. discloses a method (See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for**

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**dynamically allocating IP addresses to mobile terminals in a GPRS network).**

Bertrand et al. also discloses receiving a Create PDP Context Request message from a SGSN at a BG (See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request). Bertrand et al. further discloses assigning one of a private network address and a public network address to the mobile station and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address (See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 39, Bertrand et al. discloses a method (See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for**

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**dynamically allocating IP addresses to mobile terminals in a GPRS network).**

Bertrand et al. also discloses receiving an Activate PDP Context Request message at a SGSN from a mobile station (**See column 5 lines 4-15 and Figure 1 of Bertrand et al.**

**for reference to a mobile terminal (MT), which is a mobile station, sending an**

**Activate PDP Context Request message to a SGSN).** Bertrand et al. further

discloses sending an Activate PDP Context Accept message to the mobile station

containing information assigning an address to the mobile station (**See column 5 lines**

**52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP**

**address to the mobile terminal using an Activate PDP Context Accept message).**

Bertrand et al. does not disclose that the Activate PDP Context Request message and

the Create PDP Context Request message have an APN field containing information

that explicitly indicates requesting one of a private network address and a public

network address. Bertrand et al. also does not disclose that the public network address

or private network address is assigned based on the information contained in the APN

field of the Create PDP Context Request message.

**With respect to claims 2, 14, and 22,** Bertrand et al. does not disclose that the Activate PDP Context Accept message contains address assignment information based on the information contained in the APN field of the Activate PDP Context Request message.

**With respect to claim 9,** Bertrand et al. discloses sending a Create PDP Context Request message from the SGSN to a GGSN (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP**

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**Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request).** Bertrand et al. also discloses receiving a Create PDP Context Response message from the GGSN containing information assigning an address (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address**). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 10,** Bertrand et al. further discloses the SGSN sending a Create PDP Context Request message to a Gateway GPRS Support Node (GGSN) in response to the Activate PDP Context Request (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request**). Bertrand et al. also discloses the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address to the mobile station (**See the abstract and column 5 lines 16-67 of Bertrand et al.**

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**for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address).**

Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 11, Bertrand et al. discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request (See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request). Bertrand et al. also discloses sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station (See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context



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Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 12**, Bertrand et al. discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request (See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request). Bertrand et al. also discloses the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station (See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information

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that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 1-2, 4, 8-12, 14, 16, 20, 22, 24, 28, 31-32, 34, and 39,** Takeda et al., in the field of communications, discloses an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address **(See pages 2-3 paragraphs 26-27 and page 5 paragraphs 71-72 and 89-90 of Takeda et al. for reference to an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information identifying a destination network gateway node, which is information explicitly indicating requesting one of a private network address and a public network address since the destination network gateway is inherently either located within the private network of the mobile or a public network meaning the request is explicitly for the type of address needed to reach the destination node).** Using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address has the advantage of allowing address assignment to be based on the destination network that a mobile station is requesting to communicate with.

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It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Takeda et al., to combine using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address, as suggested by Takeda et al., with the system and method of Bertrand et al., with the motivation being to allow address assignment to be based on the destination network that a mobile station is requesting to communicate with.

**With respect to claims 1-2, 4, 8-12, 14, 16, 20, 22, 24, 28, 31-32, 34, and 39,** Although Takeda et al. discloses using an APN field identifying the destination network that a mobile station wishes to communicate, the combination of Bertrand et al., and Takeda et al. does not disclose using destination network information to assigned one of a private network address and a public network address to the mobile station. Applicant's admitted prior art discloses using destination network information to assign one of a private network address and a public network address to a mobile station as implicitly indicated by the destination network information **(See page 4 paragraph 8 of the Applicant's specification for reference to using information about which domain, or network, a host, or mobile station, is to be in communication with in order to determine whether to assign a private IP address or a public IP address).** Using destination network information to assign one of a private network address and a public network address to a mobile station has the advantage of allowing a limited pool of public IP addresses to be assigned to mobile stations only when absolutely needed.

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It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the Applicant's admitted prior art, to combine using destination network information to assign one of a private network address and a public network address to a mobile station, as suggested by the Applicant's admitted prior art, with the system and method of Bertrand et al. and Takeda et al., with the motivation being to allow a limited pool of public IP addresses to be assigned to mobile stations only when absolutely needed.

**With respect to claims 5, 17, 25, and 35, Bertrand et al. discloses that address is one of an IPv4 or IPv6 network address (See column 3 lines 2-11 of Bertrand et al. for reference to assigned addresses being IP addresses, which at the time of the invention, are in the form of IPv4 or IPv6 network addresses).**

**With respect to claims 6, 18, 26, 29, and 36, Bertrand et al. discloses that the network is a GPRS communications network (See column 1 lines 7-11 for reference to the system being a GPRS communications system).**

**With respect to claims 13 and 21, Bertrand et al. discloses sending the Create PDP Context Request message from the SGSN to a GGSN and from the GGSN to the BG (See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request). Bertrand et al. also discloses receiving the Create PDP Context Response message at the GGSN from the BG and at the SGSN from the GGSN (See the abstract and column 5 lines 16-67 of Bertrand et**

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**al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).**

6. Claims 7, 19, 27, 30, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al., in view of Takeda et al., and Applicant's admitted prior art as applied to claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 above, and further in view of Boudreaux (U.S. Pat. 6466556 B1).

**With respect to claims 7, 19, 27, 30, and 37,** the combination of Bertrand et al., Takeda et al., and Applicant's admitted prior art does not disclose using a Universal Mobile Telecommunications System.

**With respect to claims 7, 19, 27, 30, and 37,** Boudreaux, in the field of communications discloses using a Universal Mobile Telecommunications System (**See column 1 lines 48-61 of Boudreaux for reference to using a Universal Mobile Telecommunications System**). Using a Universal Mobile Telecommunications System has the advantage of using a widely accepted and used communication system architecture.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Boudreaux, to combine using a Universal Mobile Telecommunications System, as suggested by Boudreaux, with the system and method of Bertrand et al., Takeda et al., and Applicant's admitted prior art, with the motivation being to use a widely accepted and used communication system architecture.

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### ***Response to Arguments***

7. Applicant's arguments filed 3/5/07 have been fully considered but they are not persuasive.

In response to the argument that to combination of Bertrand, Takeda and Applicant's admitted prior art fails to disclose the current claim limitation of "an APN filed containing information that explicitly indicates requesting one of a public network address and a private network address", the Examiner respectfully disagrees. First, it is pointed out that the current phrasing of this claim limitation has a broader meaning than is identified by the Applicant's argument. Since the limitation is written in the alternative, it is only required that the APN field information indicates either a public address or a private network address. Also, since addresses may only be either a public address or a private address, any teaching of explicitly requesting an address is sufficient to cover the current claim limitation. It is recommended that the claims be amended such the above quoted limitation is more in line with the Applicant's arguments. However, even if the claims were amended so that the above quoted limitation had the same meaning as argued by the Applicant, it is still believed that the combination of Bertrand, Takeda and Applicant's admitted prior teaches this limitation. Takeda teaches using an APN parameter in a Create PDP Context Request and assigning an IP address based on the APN parameter (See pages 2-3 paragraphs 26-28 of Takeda). The Applicant's admitted prior art discloses using information about which domain, or network, a host, or

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mobile station, is to be in communication with in order to determine whether to assign a private IP address or a public IP address (See page 4 paragraph 8 of the Applicant's specification). The combination of Takeda's teaching with the teaching of the Applicant's admitted prior art yields a method of using an APN parameter in a Create PDP Context Request and assigning a private address or a public address based on the APN destination information in the request. The description of how the Applicant's invention uses an APN field to explicitly indicate whether a public address or private address assignment is desired can be found in paragraph 35 of the Applicant's specification. The Applicant's specification states that explicitly indicating whether a public address or private address assignment is desired is accomplished by setting particular bits of the APN field. The combination of Bertrand, Takeda and Applicant's admitted prior art discloses that the APN parameter contains bits indicating the identity of a destination APN (See Takeda) and since the location of the destination is used to determining whether to assign a public address or a private address (See Applicant's admitted prior art) the combination of teachings does meet the Applicant's definition of an "explicit indication" from paragraph 35 of the Applicant's specification. More specifically, the identity of the destination APN in the Create PDP Context Request message of Takeda corresponds to setting particular bits of the APN field to explicitly indicate whether a public or a private network address assignment is desired.

Applicant's argument that paragraph 8 of the Applicant's specification describes the use of a Network Address Translator, NAT, that operates differently from the claimed invention is moot since it is clear that paragraph 8 of the Applicant's

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specification is concerned with using Realm Specific IP, RSIP, which eliminates the need for a NAT as disclosed in paragraph 12 of the Applicant's specification.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jem

  
HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600



**Index of Claims**

Application/Control No.

10/017,398

Examiner

Jason E. Mattis

Applicant(s)/Patent under  
Reexamination

SENGODAN, SENTHIL

Art Unit

2616

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date									
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

(Attorney Docket No. 005288.00014)

In re U.S. Patent Application of	)	
Senthil SENGODAN	)	
	)	Art Unit: 2616
Application No. 10/017,398	)	
	)	Examiner: Mattis, Jason E.
Filed: December 18, 2001	)	
	)	Confirmation No. 8170
For: Method and Apparatus for Address	)	
Allocation in GPRS Networks that	)	
Facilitates End-To-End Security	)	

**AMENDMENT AND RESPONSE**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

Sir:

This paper is responsive to the non-final Office Action dated May 25, 2007. The Office Action set a three-month period for response, thus making this paper due on or before **August 25, 2007**. The Commissioner is hereby authorized to charge any fee or credit any overpayment of fee to Deposit Account No. 19-0733.

**Amendments to the Claims** are reflected in the Listing of Claims, which begins on page 2 of this paper.

**Remarks/Arguments** begin on page 12 of this paper.

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This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-7. (Cancelled)

8. (Currently Amended) A method comprising:

receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving General Packet Radio System (GPRS) Support Node (SGSN) of ~~the~~ a network from a mobile station of the network, the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address to be assigned to the mobile station; and

sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

9. (Currently Amended) The method according to claim 8, further comprising ~~steps~~ of:

sending a Create PDP Context Request message from the SGSN to a Gateway General Packet Radio System (GPRS) Support Node (GGSN) of the network, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address for the mobile station; and

receiving a Create PDP Context Response message from the GGSN containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

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10. (Currently Amended) The method according to claim 9, further comprising ~~steps~~  
of:

receiving the Create PDP Context Request message from the SGSN at the GGSN;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

11. (Currently Amended) The method according to claim 8, further comprising ~~steps~~  
of:

sending a Create PDP Context Request message from the SGSN to a Border Gateway (BG) of the network, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address for the mobile station; and

receiving a Create PDP Context Response message at the SGSN from the BG containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

12. (Currently Amended) The method according to claim 11, further comprising ~~steps~~  
of:

receiving the Create PDP Context Request message at the BG;

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assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

sending the Create PDP Context Response message to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

13. (Currently Amended) The method according to claim 12, further comprising ~~steps~~ ~~of~~:

sending the Create PDP Context Request message from the SGSN to a Gateway General Packet Radio System (GPRS) Support Node (GGSN) of the network;

sending the Create PDP Context Request message from the GGSN to the BG;

receiving the Create PDP Context Response message at the GGSN from the BG; and

receiving the Create PDP Context Response message at the SGSN from the GGSN.

14. (Currently Amended) The method according to claim 8, further comprising ~~a step~~ receiving at the mobile station the Activate PDP Context Accept message containing the information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

15. (Cancelled)

16. (Cancelled)

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17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20-27. (Cancelled)

28. (Currently Amended) A method comprising:

receiving a Create Packet Data Protocol (PDP) Context Request message from a Serving General Packet Radio System (GPRS) Support Node (SGSN) at a Gateway General Packet Radio System (GPRS) Support Node (GGSN), the Create PDP Context Request Message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address ~~for~~ to be assigned to a mobile station of the network;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

29. (Cancelled)

30. (Cancelled)

31. (Currently Amended) A method comprising:

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receiving a Create Packet Data Protocol (PDP) Context Request message from a Serving General Packet Radio System (GPRS) Support Node (SGSN) at a Border Gateway (BG), the Create PDP Context Request Message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address ~~for~~ to be assigned to a mobile station of the a network;

assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the BG to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

32. (Currently Amended) A method comprising:

sending an Activate Packet Data Protocol (PDP) Context Request message to a Serving General Packet Radio System (GPRS) Support Node (SGSN) of ~~the a~~ a network from a mobile station of the network, the Activate PDP Context Request message having an APN field containing information containing information that explicitly indicates requesting one of a private network address and a public network address to be assigned to the mobile station; and

receiving at the mobile station an Activate PDP Context Accept message containing information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

33. (Cancelled)

34. (Cancelled)

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35. (Original) The method according to claim 32, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

36. (Previously Presented) The method according to claim 32, wherein the network is a GPRS communications network.

37. (Previously Presented) The method according to claim 32, wherein the network is a Universal Mobile Telecommunications System.

38. (Cancelled)

39. (Currently Amended) A The method according to claim 8, wherein in the receiving and sending, the information comprising:

~~receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving General Packet Radio System (GPRS) Support Node (SGSN) of a network from a mobile station of the network, the Activate PDP Context Request message having an APN field comprises containing one or more parameters that explicitly indicates requesting one of a private network address and a public network address to be assigned to the mobile station; and~~

~~sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address to the mobile station based on the one or more parameters indicating the type of requested network address contained in the APN field of the Activate PDP Context Request message.~~

40. (New) A computer server configured to:

receive an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of a network, the Activate PDP Context Request message having an APN field containing



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information that explicitly indicates requesting one of a private network address and a public network address to be assigned to the mobile station; and

send an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

41. (New) The computer server according to claim 40, further configured to:

send a Create PDP Context Request to a Gateway General Packet Radio System (GPRS) Support Node (GGSN) of the network, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address for the mobile station; and

receive a Create PDP Context Response message from the GGSN containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

42. (New) The computer server according to claim 40, further configured to:

send a Create Packet Data Protocol (PDP) Context Request message to a Border Gateway (BG) of a network, the Create PDP Context Request message having an APN field containing information relating to a request for one of a private network address and a public network address for the mobile station; and

receive a Create PDP Context Response message from the BG containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

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43. (New) The computer server according to claim 40, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

44. (New) The computer server according to claim 40, wherein the network is a GPRS communications network.

45. (New) The computer server according to claim 40, wherein the network is a Universal Mobile Telecommunications System.

46. (New) The computer server according to claim 40, wherein the information comprises one or more parameters that explicitly indicates requesting one of a private network address and a public network address to be assigned to the mobile station.

47. (New) A computer server configured to:

receive a Create Packet Data Protocol (PDP) Context Request message from a Serving General Packet Radio System (GPRS) Support Node (SGSN), the Create PDP Context Request Message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address to be assigned to a mobile station of a network;

assign one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

send the Create PDP Context Response message to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

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48. (New) A computer server configured to:

receive a Create PDP Context Request message from a Serving General Packet Radio System (GPRS) Support Node (SGSN) of a network, the Create PDP Context Request message having an APN field containing one or more parameters that explicitly indicates requesting one of a private network address and a public network address to be assigned to a mobile station of the network;

assign one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

send the Create PDP Context Response message to the SGSN containing the information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

49. (New) A mobile station configured to:

send an Activate Packet Data Protocol (PDP) Context Request message to a Serving General Packet Radio System (GPRS) Support Node (SGSN) of a network, the Activate PDP Context Request message having an APN field containing information containing information that explicitly indicates requesting one of a private network address and a public network address to be assigned to the mobile station; and

receive an Activate PDP Context Accept message containing information relating to an assignment of one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

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50. (New) The mobile station according to claim 49, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

51. (New) A system comprising:

a Serving General Packet Radio System (GPRS) Support Node (SGSN) configured to send a Create Packet Data Protocol (PDP) Context Request to a Gateway General Packet Radio System (GPRS) Support Node (GGSN) of a network, the Create PDP Context Request message having an APN field containing one or more parameters that explicitly indicates requesting one of a private network address and a public network address to be assigned to a mobile station of the network;

a GGSN configured to send the Create PDP Context Request message to a Border Gateway (BG); and

a BG configured to send a Create PDP Context Response message to the GGSN,

the SGSN configured to receive the Create PDP Context Response from the GGSN.

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PATENT

### REMARKS/ARGUMENTS

The Office Action of May 25, 2007, has been carefully reviewed and these remarks are responsive thereto. Claims 1-7, 15-27, 29-30, 33-34, and 38 have been canceled, claims 8-14, 28, 31, 32, and 39 have been amended, and new claims 40-51 have been added. Claims 8-14, 28, 31-32, 35-37, and 39-51 remain pending and allowance of these claims is respectfully requested.

#### ***Claim Rejections Under 35 U.S.C. §112, second paragraph***

Claims 8, 32, and 39 were rejected under 35 U.S.C. §112, second paragraph as lacking an antecedent basis for “network.” In accordance with the Examiner’s recommendation, the first instance of the phrase “the network” has been changed to “a network” in each of these claims. A similar amendment has been made in claim 31.

#### ***Claim Rejections Under 35 U.S.C. §103(a)***

Claims 1, 2, 5, 6, 8-14, 17, 18, 20-22, 25, 26, 28-29, 31, 32, 35, 36, and 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand *et al.* (U.S. patent No. 6,687,252, hereinafter “Bertrand et al.”) in view of Takeda et al. (U.S. Publication No. US 2001/0048686 A1) and further in view of Applicant’s alleged admitted prior art (as found in Applicant’s specification).

Claims 7, 19, 27, 30 and 37 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al. in view of Takeda et al. and Applicant’s admitted prior art as applied to claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 above and further in view of Boudreaux (US Patent No. 6,466,556).

These rejections of the pending claims are respectfully traversed. As recognized in the Office Action, Bertrand et al. does not disclose an Activate PDP Context Request message and a Create PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. As also recognized in the Office Action, Bertrand et al. does not disclose that a public network address or private network address is assigned based on the information contained in an APN field of a Create PDP Context Request message. As recognized in the Office Action, the proposed combination of Bertrand et al. and Takeda et al. does not disclose using destination network

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information to assign one of a private network address and a public network address to a mobile station.

In addition, Takeda et al. does not teach features alleged in the Office Action. More specifically, none of the cited passages in Takeda teach that the node identified in the APN (the address thereof) would explicitly (or implicitly) be equivalent to requesting a private or public network address to be assigned to a mobile station. For example, the Office Action cites to paragraphs 26-27 of Takeda et al., however reading onward, paragraphs 28-29 reveal that the process in Takeda returns to the mobile node **the IP address of the gateway node**, and not an address assigned to the mobile station itself (as recited in the present claims). Similarly are cited paragraphs 71-72 of Takeda et al., and further therein in paragraph 74 Takeda et al. teaches that the GGSN sends its own IP address to the mobile station, not an address assigned to the mobile station by which the mobile station could be reached. Similarly paragraphs 89-90 of Takeda et al. fail to teach that an IP address would be assigned to the mobile station, and in particular these paragraphs in Takeda et al. fail to teach that a private or public IP address would be so assigned, depending on the contents of the APN field.

It is respectfully submitted Applicant's specification does not contain any "AAPA" that precludes allowance of the pending claims. The description in the specification on the operation of a NAT, wherein a node having a private address can communicate with nodes outside the private network is different from the Office Action's assertion that a public address would somehow be implicitly requested if a node would be intending to communicate with a node outside the current private network.

The pending independent claims in the application claim an "APN field containing information that explicitly indicates requesting one of a private network address and a public network address to be assigned to [the/a] mobile station." Neither Bertrand et al. or Takeda et al. or alleged AAPA in Applicant's specification, either separately or in combination, teaches or suggests such a feature. Neither Bertrand et al., nor Takeda et al., nor alleged AAPA in Applicant's specification provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner claimed by the Applicant.

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**CONCLUSION**

All rejections having been addressed, Applicants respectfully submit that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. However, if for any reason the Examiner believes the application is not in condition for allowance or there are any questions, the Examiner is requested to contact the undersigned at (312) 463-5405.

Respectfully submitted,

Dated: August 23, 2007

By: 

Robert H. Resis  
Registration No. 32,168  
BANNER & WITCOFF, LTD.  
10 South Wacker Drive, Suite 3000  
Chicago, IL 60606  
Direct Dial: 312 -463-5405

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<b>CHANGE OF CORRESPONDENCE ADDRESS Application</b>  Address to: Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450.	<b>Application Number</b>	10/017,398
	<b>Filing Date</b>	12/18/2001
	<b>First Named Inventor</b>	Senthil Sengodan
	<b>Art Unit</b>	2616
	<b>Examiner Name</b>	Jason E. Mattis
	<b>Attorney Docket Number</b>	005288.00014

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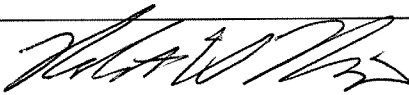
☐ Applicant/Inventor.

☐ Assignee of record of the entire interest.  
Certificate under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☒ Attorney or agent of record. Reg. No. 32,168

☐ Registered practitioner named in the application transmittal letter in an application without an executed oath or declaration. See 37 CFR 1.33(a)(1). Reg. No. \_\_\_\_\_

Typed or Printed Name Robert H. Resis

Signature 

Date 08/23/2007

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ \*Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	10017398			
<b>Filing Date:</b>	18-Dec-2001			
<b>Title of Invention:</b>	Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security			
First Named Inventor/Applicant Name:	Senthil Sengodan			
<b>Filer:</b>	Robert H. Resis/Alma Bahena			
<b>Attorney Docket Number:</b>	005288.00014			
Filed as Large Entity				
<b>Utility      Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
Independent claims in excess of 3	1201	1	200	200
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
Post-Allowance-and-Post-Issuance:				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				200

**Electronic Acknowledgement Receipt**

<b>EFS ID:</b>	2115598
<b>Application Number:</b>	10017398
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	8170
<b>Title of Invention:</b>	Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security
<b>First Named Inventor/Applicant Name:</b>	Senthil Sengodan
<b>Customer Number:</b>	22908
<b>Filer:</b>	Robert H. Resis/Alma Bahena
<b>Filer Authorized By:</b>	Robert H. Resis
<b>Attorney Docket Number:</b>	005288.00014
<b>Receipt Date:</b>	23-AUG-2007
<b>Filing Date:</b>	18-DEC-2001
<b>Time Stamp:</b>	12:53:50
<b>Application Type:</b>	Utility under 35 USC 111(a)

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**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1		Amendment14.pdf	836704 d3dbaeedeb044b9c5c0f2d2daae8c762d8e92929	yes	15
<b>Multipart Description/PDF files in .zip description</b>					
	<b>Document Description</b>		<b>Start</b>		<b>End</b>
	Amendment - After Non-Final Rejection		1		1
	Claims		2		11
	Applicant Arguments/Remarks Made in an Amendment		12		14
	Change of Address		15		15
<b>Warnings:</b>					
<b>Information:</b>					
2	Fee Worksheet (PTO-06)	fee-info.pdf	8200 ee9021e43df028b28a89203d4cc93e0fd14cf096	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			844904		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

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## PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-876

Application or Docket Number: 10/017398

### CLAIMS AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY	OR	OTHER THAN SMALL ENTITY
BASIC FEE (37 CFR 1.16(a))			RATE		RATE
TOTAL CLAIMS (37 CFR 1.16(c))			FEE		FEE
INDEPENDENT CLAIMS (37 CFR 1.16(b))	minus 20 =		X \$		X \$
	minus 3 =		X \$		X \$
			+ \$		+ \$
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(d))			TOTAL		TOTAL

\* If the difference in column 1 is less than zero, enter "0" in column 2.

### CLAIMS AS AMENDED - PART II

#### AMENDMENT A 3/5/07

(Column 1)	(Column 2) CLAIMS REMAINING AFTER AMENDMENT	(Column 3) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 4) PRESENT EXTRA	SMALL ENTITY	OR	OTHER THAN SMALL ENTITY
Total (37 CFR 1.16(c))	<u>30</u>	Minus <u>38</u>		RATE		RATE
Independent (37 CFR 1.16(b))	<u>7</u>	Minus <u>7</u>		ADDITIONAL FEE		ADDITIONAL FEE
				X \$		X \$
				X \$		X \$
				+ \$		+ \$
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))				TOTAL ADD'L FEE		TOTAL ADD'L FEE

#### AMENDMENT B 2/23/07

(Column 1)	(Column 2) CLAIMS REMAINING AFTER AMENDMENT	(Column 3) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 4) PRESENT EXTRA	SMALL ENTITY	OR	OTHER THAN SMALL ENTITY
Total (37 CFR 1.16(c))	<u>26</u>	Minus <u>38</u>		RATE		RATE
Independent (37 CFR 1.16(b))	<u>9</u>	Minus <u>7</u>	<u>2</u>	ADDITIONAL FEE		ADDITIONAL FEE
				X \$		X \$
				X \$		X \$
				+ \$		+ \$
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))				TOTAL ADD'L FEE		TOTAL ADD'L FEE <u>400</u>

#### AMENDMENT C

(Column 1)	(Column 2) CLAIMS REMAINING AFTER AMENDMENT	(Column 3) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 4) PRESENT EXTRA	SMALL ENTITY	OR	OTHER THAN SMALL ENTITY
Total (37 CFR 1.16(c))		Minus		RATE		RATE
Independent (37 CFR 1.16(b))		Minus		ADDITIONAL FEE		ADDITIONAL FEE
				X \$		X \$
				X \$		X \$
				+ \$		+ \$
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))				TOTAL ADD'L FEE		TOTAL ADD'L FEE

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,398	12/18/2001	Senthil Sengodan	005288.00014	8170

22907 7590 10/26/2007  
 BANNER & WITCOFF, LTD.  
 1100 13th STREET, N.W.  
 SUITE 1200  
 WASHINGTON, DC 20005-4051

EXAMINER
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MATTIS, JASON E

ART UNIT	PAPER NUMBER
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2616

MAIL DATE	DELIVERY MODE
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10/26/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/017,398

Applicant(s)

SENGODAN, SENTHIL

Examiner

Jason E. Mattis

Art Unit

2616

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 August 2007.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-14, 28, 31, 32, 35-37 and 39-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-14, 28, 31, 32, 35-37, and 39-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.



Application/Control Number: 10/017,398  
Art Unit: 2616

Page 2

### DETAILED ACTION

1. This Office Action is in response to the Amendment filed 8/23/07. Due to the amendment, the previous rejections under 35 U.S.C. 112 have been withdrawn. Claims 1-7, 15-27, 29, 30, 33, 34, and 38 have been cancelled. New claims 40-51 have been added. Claims 8-14, 28, 31, 32, 35-37, and 39-51 are currently pending in the application.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8-14, 28, 31, 32, 35, 36, and 39-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al. (U.S. Pat. 6687252 B1) in view of Takeda et al. (U.S. Publication US 2001/0048686 A1) and in further view of Applicant's admitted prior (as found in the Applicant's specification).

**With respect to claims 8, 32, 40, and 49, Bertrand et al. discloses a method in a computer server (See column 4 line 31 to column 5 line 3 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network including an SGSN, which is a server).**

Application/Control Number: 10/017,398

Page 3

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Bertrand et al. also discloses receiving an Activate PDP Context Request message at a SGSN from a mobile station (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN**). Bertrand et al. further discloses sending an Activate PDP Context Accept message to the mobile station containing information assigning an address to the mobile station (**See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message**). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 28, 47, and 48,** Bertrand et al. discloses a method in a computer server (**See column 4 line 31 to column 5 line 3 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network including an SGSN, which is a server**). Bertrand et al. also discloses receiving a Create PDP Context Request message from a SGSN at a GGSN (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN**). Bertrand et al. further discloses assigning one of a private network address and a public network

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address to the mobile station and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address**). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 31, Bertrand et al. discloses a method (See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network).** Bertrand et al. also discloses receiving a Create PDP Context Request message from a SGSN at a BG (**See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request**). Bertrand et al. further discloses assigning one of a private network address and a public network

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address to the mobile station and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).**

Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 39, Bertrand et al. discloses a method (See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network).**

Bertrand et al. also discloses receiving an Activate PDP Context Request message at a SGSN from a mobile station (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN).** Bertrand et al. further discloses sending an Activate PDP Context Accept message to the mobile station containing information assigning an address to the mobile station (**See column 5 lines**

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**52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message).**

Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 9 and 41, Bertrand et al. discloses sending a Create PDP Context Request message from the SGSN to a GGSN (See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request).** Bertrand et al. also discloses receiving a Create PDP Context Response message from the GGSN containing information assigning an address **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is

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assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 10**, Bertrand et al. further discloses the SGSN sending a Create PDP Context Request message to a Gateway GPRS Support Node (GGSN) in response to the Activate PDP Context Request **(See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request)**. Bertrand et al. also discloses the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address)**. Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

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**With respect to claims 11 and 42,** Bertrand et al. discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request **(See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request).** Bertrand et al. also discloses sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 12,** Bertrand et al. discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request **(See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in**

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**response to the SGSN receiving the Activate PDP Context Request).** Bertrand et al. also discloses the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).**

Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 14,** Bertrand et al. does not disclose that the Activate PDP Context Accept message contains address assignment information based on the information contained in the APN field of the Activate PDP Context Request message.

**With respect to claim 46,** Bertrand et al. does not disclose that the information comprises one or more parameters that explicitly indicates requesting one of a private network address and a public network address to be assigned to the mobile station.



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With respect to claim 51, Bertrand et al. discloses a system comprising an SGSN configured to send a Create PDP Context Request to a GGSN of a network (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to an SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request**). Bertrand et al. also discloses a GGSN configured to send the Create PDP Context Request message to a BG **See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the GGSN forwarding the Create PDP Context Request message to a Radius server (RS), which is a BG**). Bertrand et al. further discloses sending a Create PDP Context Response message containing the information assigning the address to the mobile station from the BG to the GGSN and from the GGSN to the SGSN (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address**). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 8-12, 14, 28, 31, 32, 39-42, 46-49, and 51, Takeda et al., in the field of communications, discloses an Activate PDP Context Request**

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message and a Create PDP Context Request message that have an APN field containing information that explicitly indicates requesting one of a private network address and a public network address to be assigned to a mobile station (**See pages 2-3 paragraphs 26-27, page 5 paragraphs 71-72, pages 5-6 and 89-97, and Figure 5 of Takeda et al. for reference to an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information identifying a destination network gateway node, which is information explicitly indicating requesting one of a private network address and a public network address since the destination network gateway is inherently either located within the private network of the mobile or a public network meaning the request is explicitly for the type of address needed to reach the destination node**). Using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address has the advantage of allowing address assignment to be based on the destination network that a mobile station is requesting to communicate with.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Takeda et al., to combine using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address, as suggested by Takeda et al., with the system and method of Bertrand et al., with the motivation being to allow address assignment to be based on the destination network that a mobile station is requesting to communicate with.

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**With respect to claims 8-12, 14, 28, 31, 32, 39-42, 46-49, and 51,** Although Takeda et al. discloses using an APN field identifying the destination network that a mobile station wishes to communicate, the combination of Bertrand et al., and Takeda et al. does not disclose using destination network information to assign one of a private network address and a public network address to the mobile station. Applicant's admitted prior art discloses using destination network information to assign one of a private network address and a public network address to a mobile station as implicitly indicated by the destination network information **(See page 4 paragraph 8 of the Applicant's specification for reference to using information about which domain, or network, a host, or mobile station, is to be in communication with in order to determine whether to assign a private IP address or a public IP address)**. Using destination network information to assign one of a private network address and a public network address to a mobile station has the advantage of allowing a limited pool of public IP addresses to be assigned to mobile stations only when absolutely needed.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the Applicant's admitted prior art, to combine using destination network information to assign one of a private network address and a public network address to a mobile station, as suggested by the Applicant's admitted prior art, with the system and method of Bertrand et al. and Takeda et al., with the motivation being to allow a limited pool of public IP addresses to be assigned to mobile stations only when absolutely needed.

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**With respect to claim 13**, Bertrand et al. discloses sending the Create PDP Context Request message from the SGSN to a GGSN and from the GGSN to the BG (See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request). Bertrand et al. also discloses receiving the Create PDP Context Response message at the GGSN from the BG and at the SGSN from the GGSN (See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).

**With respect to claims 35, 43, and 50**, Bertrand et al. discloses that address is one of an IPv4 or IPv6 network address (See column 3 lines 2-11 of Bertrand et al. for reference to assigned addresses being IP addresses, which at the time of the invention, are in the form of IPv4 or IPv6 network addresses).

**With respect to claims 36 and 44**, Bertrand et al. discloses that the network is a GPRS communications network (See column 1 lines 7-11 for reference to the system being a GPRS communications system).

4. Claims 37 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al., in view of Takeda et al., and Applicant's admitted prior art as applied to claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 above, and further in view of Boudreaux (U.S. Pat. 6466556 B1).

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**With respect to claims 37 and 45**, the combination of Bertrand et al., Takeda et al., and Applicant's admitted prior art does not disclose using a Universal Mobile Telecommunications System.

**With respect to claims 37 and 45**, Boudreaux, in the field of communications discloses using a Universal Mobile Telecommunications System (**See column 1 lines 48-61 of Boudreaux for reference to using a Universal Mobile Telecommunications System**). Using a Universal Mobile Telecommunications System has the advantage of using a widely accepted and used communication system architecture.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Boudreaux, to combine using a Universal Mobile Telecommunications System, as suggested by Boudreaux, with the system and method of Bertrand et al., Takeda et al., and Applicant's admitted prior art, with the motivation being to use a widely accepted and used communication system architecture.

### ***Response to Arguments***

5. Applicant's arguments filed 8/23/07 have been fully considered but they are not persuasive.

In response to Applicant's argument that Takeda et al. does not disclose returning an IP address to the mobile node that is an IP address assigned to the mobile

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node, the Examiner respectfully disagrees. Takeda et al. discloses a method (See pages 5-6 paragraphs 90-97 and Figure 5 of Takeda et al.) including a mobile terminal sending an Activate PDP Context Request including an APN (step 109) to a subscriber node that sends a Create PDP Context Request the APN (step 110) to a gateway that makes a decision about whether an IP address needs to be allocated (See paragraph 94) and requests an IP address be allocated to the mobile node when needed (step 116) and sends an IP address allocated to the mobile terminal (steps 120 and 121). Thus Takeda et al. does disclose requesting and allocating an IP address using information in an APN field of an Activate PDP Context Request message.

In response to Applicant's argument that to combination of Bertrand, Takeda and Applicant's admitted prior art fails to disclose the current claim limitation of "an APN filed containing information that explicitly indicates requesting one of a public network address and a private network address", the Examiner respectfully disagrees. First, as discussed in the Response to Arguments section of the previous Office Action, it is pointed out that the current phrasing of this claim limitation has a broader meaning than is identified by the Applicant's argument. Since the limitation is written in the alternative, it is only required that the APN field information indicates either a public address or a private network address. Also, since addresses may only be either a public address or a private address, any teaching of explicitly requesting an address is sufficient to cover the current claim limitation. It is recommended that the claims be amended such the above quoted limitation is more in line with the Applicant's arguments. However, even if the claims were amended so that the above quoted limitation had the same meaning as

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argued by the Applicant, it is still believed that the combination of Bertrand, Takeda and Applicant's admitted prior teaches this limitation. Takeda teaches using an APN parameter in a Create PDP Context Request and assigning an IP address based on the APN parameter (See pages 2-3 paragraphs 26-28 of Takeda). The Applicant's admitted prior art discloses using information about which domain, or network, a host, or mobile station, is to be in communication with in order to determine whether to assign a private IP address or a public IP address (See page 4 paragraph 8 of the Applicant's specification). The combination of Takeda's teaching with the teaching of the Applicant's admitted prior art yields a method of using an APN parameter in a Create PDP Context Request and assigning a private address or a public address based on the APN destination information in the request. The description of how the Applicant's invention uses an APN field to explicitly indicate whether a public address or private address assignment is desired can be found in paragraph 35 of the Applicant's specification. The Applicant's specification states that explicitly indicating whether a public address or private address assignment is desired is accomplished by setting particular bits of the APN field. The combination of Bertrand, Takeda and Applicant's admitted prior art discloses that the APN parameter contains bits indicating the identity of a destination APN (See Takeda) and since the location of the destination is used to determining whether to assign a public address or a private address (See Applicant's admitted prior art) the combination of teachings does meet the Applicant's definition of an "explicit indication" from paragraph 35 of the Applicant's specification. More specifically, the identity of the destination APN in the Create PDP Context Request

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message of Takeda corresponds to setting particular bits of the APN field to explicitly indicate whether a public or a private network address assignment is desired.

Applicant's argument that paragraph 8 of the Applicant's specification describes the use of a Network Address Translator, NAT, that operates differently from the claimed invention is moot since it is clear that paragraph 8 of the Applicant's specification is concerned with using Realm Specific IP, RSIP, which eliminates the need for a NAT as disclosed in paragraph 12 of the Applicant's specification.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jem

A handwritten signature in black ink, appearing to read 'Huy D. Vu', with a long horizontal line extending to the right.

**HUY D. VU**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**

**Index of Claims**

Application/Control No.

10/017,398

Examiner

Jason E. Mattis

Applicant(s)/Patent under Reexamination

SENGODAN, SENTHIL

Art Unit

2616

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date									
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# **REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL** **(Submitted Only via EFS-Web)**

Application Number	10/017,398	Filing Date	2001-12-18	Docket Number (if applicable)	005288.00014	Art Unit	2616
First Named Inventor	Senthil Sengodan			Examiner Name	Jason E. Mattis		

**This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.**  
 Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

## **SUBMISSION REQUIRED UNDER 37 CFR 1.114**

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_

☐ Other \_\_\_\_\_

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other \_\_\_\_\_

## **MISCELLANEOUS**

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months \_\_\_\_\_  
 (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other \_\_\_\_\_

## **FEES**

**The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**


☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 190733

## **SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**

☒ Patent Practitioner Signature

☐ Applicant Signature

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature		Date (YYYY-MM-DD)	2007-12-12
Name	Robert H. Resis	Registration Number	32168

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

# **REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL** **(Submitted Only via EFS-Web)**

Application Number	10/017,398	Filing Date	2001-12-18	Docket Number (if applicable)	005288.00014	Art Unit	2616
First Named Inventor	Senthil Sengodan			Examiner Name	Jason E. Mattis		

**This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.**  
 Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

## **SUBMISSION REQUIRED UNDER 37 CFR 1.114**

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_

☐ Other \_\_\_\_\_

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other \_\_\_\_\_

## **MISCELLANEOUS**

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months \_\_\_\_\_  
 (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other \_\_\_\_\_

## **FEES**

**The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**


☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 190733

## **SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**

☒ Patent Practitioner Signature

☐ Applicant Signature

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature		Date (YYYY-MM-DD)	2007-12-12
Name	Robert H. Resis	Registration Number	32168

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

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## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	10017398			
<b>Filing Date:</b>	18-Dec-2001			
<b>Title of Invention:</b>	Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security			
First Named Inventor/Applicant Name:	Senthil Sengodan			
<b>Filer:</b>	Robert H. Resis/Alma Bahena			
<b>Attorney Docket Number:</b>	005288.00014			
Filed as Large Entity				
<b>Utility      Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
Post-Allowance-and-Post-Issuance:				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
Request for continued examination	1801	1	810	810
<b>Total in USD (\$)</b>				<b>810</b>



**Electronic Acknowledgement Receipt**

<b>EFS ID:</b>	2580939
<b>Application Number:</b>	10017398
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	8170
<b>Title of Invention:</b>	Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security
<b>First Named Inventor/Applicant Name:</b>	Senthil Sengodan
<b>Customer Number:</b>	22907
<b>Filer:</b>	Robert H. Resis/Alma Bahena
<b>Filer Authorized By:</b>	Robert H. Resis
<b>Attorney Docket Number:</b>	005288.00014
<b>Receipt Date:</b>	12-DEC-2007
<b>Filing Date:</b>	18-DEC-2001
<b>Time Stamp:</b>	16:18:04
<b>Application Type:</b>	Utility under 35 USC 111(a)

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Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 810
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Deposit Account	190733
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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1		Amendment14.pdf	1132045	yes	17
			c1fc2cc66391827755a66769da9e557e28dddbf3		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment Submitted/Entered with Filing of CPA/RCE		1	1	
	Claims		2	11	
	Applicant Arguments/Remarks Made in an Amendment		12	15	
	Request for Continued Examination (RCE)		16	17	
Warnings:					
Information:					
2	Fee Worksheet (PTO-06)	fee-info.pdf	8214	no	2
			7ce14c060e36c327beb3eae0fda0bb2d7a26d443		
Warnings:					
Information:					
Total Files Size (in bytes):			1140259		

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**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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Reply to Office Action of October 26, 2007

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

(Attorney Docket No. 005288.00014)

In re U.S. Patent Application of	)	
Senthil SENGODAN	)	
	)	Art Unit: 2616
Application No. 10/017,398	)	
	)	Examiner: Mattis, Jason E.
Filed: December 18, 2001	)	
	)	Confirmation No. 8170
For: Method and Apparatus for Address	)	
Allocation in GPRS Networks that	)	
Facilitates End-To-End Security	)	

**AMENDMENT AND RESPONSE**

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

Sir:

This paper is responsive to the final Office Action dated October 26, 2007. The Office Action set a three-month period for response, thus making this paper due on or before **January 26, 2008**. The Commissioner is hereby authorized to charge any fee or credit any overpayment of fee to Deposit Account No. 19-0733.

**Amendments to the Claims** are reflected in the Listing of Claims, which begins on page 2 of this paper.

**Remarks/Arguments** begin on page 12 of this paper.

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This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-7. (Cancelled)

8. (Currently Amended) A method comprising:

receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving General Packet Radio System (GPRS) Support Node (SGSN) of a network from a mobile station of the network, the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting either ~~one of~~ a private network address ~~and~~ or a public network address to be assigned to the mobile station; and

sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

9. (Currently Amended) The method according to claim 8, further comprising:

sending a Create PDP Context Request message from the SGSN to a Gateway General Packet Radio System (GPRS) Support Node (GGSN) of the network, the Create PDP Context Request message having an APN field containing information relating to a request for either ~~one of~~ a private network address ~~and~~ or a public network address for the mobile station; and

receiving a Create PDP Context Response message from the GGSN containing information assigning either ~~one of~~ a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

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10. (Currently Amended) The method according to claim 9, further comprising:

receiving the Create PDP Context Request message from the SGSN at the GGSN;

assigning either ~~one of~~ a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning ~~one of~~ either a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

11. (Currently Amended) The method according to claim 8, further comprising:

sending a Create PDP Context Request message from the SGSN to a Border Gateway (BG) of the network, the Create PDP Context Request message having an APN field containing information relating to a request for ~~one of~~ either a private network address ~~and~~ or a public network address for the mobile station; and

receiving a Create PDP Context Response message at the SGSN from the BG containing information assigning ~~one of~~ either a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

12. (Currently Amended) The method according to claim 11, further comprising:

receiving the Create PDP Context Request message at the BG;

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assigning ~~one of~~ either a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

sending the Create PDP Context Response message to the SGSN containing the information assigning ~~one of~~ either a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

13. (Previously Presented) The method according to claim 12, further comprising:

sending the Create PDP Context Request message from the SGSN to a Gateway General Packet Radio System (GPRS) Support Node (GGSN) of the network;

sending the Create PDP Context Request message from the GGSN to the BG;

receiving the Create PDP Context Response message at the GGSN from the BG; and

receiving the Create PDP Context Response message at the SGSN from the GGSN.

14. (Currently Amended) The method according to claim 8, further comprising receiving at the mobile station the Activate PDP Context Accept message containing the information relating to an assignment of ~~one of~~ either a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

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18. (Cancelled)

19. (Cancelled)

20-27. (Cancelled)

28. (Currently Amended) A method comprising:

receiving a Create Packet Data Protocol (PDP) Context Request message from a Serving General Packet Radio System (GPRS) Support Node (SGSN) at a Gateway General Packet Radio System (GPRS) Support Node (GGSN), the Create PDP Context Request Message having an APN field containing information that explicitly indicates requesting ~~one of either~~ a private network address ~~and or~~ a public network address to be assigned to a mobile station of the network;

assigning ~~one of either~~ a private network address ~~and or~~ a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

sending the Create PDP Context Response message from the GGSN to the SGSN containing the information assigning ~~one of either~~ a private network address ~~and or~~ a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

29. (Cancelled)

30. (Cancelled)

31. (Currently Amended) A method comprising:



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receiving a Create Packet Data Protocol (PDP) Context Request message from a Serving General Packet Radio System (GPRS) Support Node (SGSN) at a Border Gateway (BG), the Create PDP Context Request Message having an APN field containing information that explicitly indicates requesting ~~one of~~ either a private network address ~~and~~ or a public network address to be assigned to a mobile station of a network;

assigning ~~one of~~ either a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message and

sending the Create PDP Context Response message from the BG to the SGSN containing the information assigning ~~one of~~ either a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

32. (Currently Amended) A method comprising:

sending an Activate Packet Data Protocol (PDP) Context Request message to a Serving General Packet Radio System (GPRS) Support Node (SGSN) of a network from a mobile station of the network, the Activate PDP Context Request message having an APN field containing information containing information that explicitly indicates requesting ~~one of~~ either a private network address ~~and~~ or a public network address to be assigned to the mobile station; and

receiving at the mobile station an Activate PDP Context Accept message containing information relating to an assignment of ~~one of~~ either a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

33. (Cancelled)

34. (Cancelled)

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35. (Original) The method according to claim 32, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

36. (Previously Presented) The method according to claim 32, wherein the network is a GPRS communications network.

37. (Previously Presented) The method according to claim 32, wherein the network is a Universal Mobile Telecommunications System.

38. (Cancelled)

39. (Currently Amended) The method according to claim 8, wherein in the receiving and sending, the information comprises one or more parameters that explicitly indicates requesting ~~one of either~~ a private network address ~~and or~~ a public network address to be assigned to the mobile station.

40. (Currently Amended) An apparatus ~~computer server~~ comprising a processor and a memory storing instructions that, when executed, the apparatus is configured to:

receive an Activate Packet Data Protocol (PDP) Context Request message from a mobile station of a network, the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting ~~one of either~~ a private network address ~~and or~~ a public network address to be assigned to the mobile station; and

send an Activate PDP Context Accept message to the mobile station containing information assigning ~~one of either~~ a private network address ~~and or~~ a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

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41. (Currently Amended) The apparatus ~~computer server~~ according to claim 40, wherein the instructions, when executed, the apparatus is further configured to:

send a Create PDP Context Request to a Gateway General Packet Radio System (GPRS) Support Node (GGSN) of the network, the Create PDP Context Request message having an APN field containing information relating to a request for ~~one of either~~ a private network address ~~and~~ or a public network address for the mobile station; and

receive a Create PDP Context Response message from the GGSN containing information assigning ~~one of either~~ a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

42. (Currently Amended) The apparatus ~~computer server~~ according to claim 40, wherein the instructions, when executed, the apparatus is further configured to:

send a Create Packet Data Protocol (PDP) Context Request message to a Border Gateway (BG) of a network, the Create PDP Context Request message having an APN field containing information relating to a request for ~~one of either~~ a private network address ~~and~~ or a public network address for the mobile station; and

receive a Create PDP Context Response message from the BG containing information assigning ~~one of either~~ a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

43. (Currently Amended) The ~~computer server~~ apparatus according to claim 40, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

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44. (Currently Amended) The apparatus ~~computer server~~ according to claim 40, wherein the network is a GPRS communications network.

45. (Currently Amended) The apparatus ~~computer server~~ according to claim 40, wherein the network is a Universal Mobile Telecommunications System.

46. (Currently Amended) The apparatus ~~computer server~~ according to claim 40, wherein the information comprises one or more parameters that explicitly indicates requesting ~~one of either~~ a private network address ~~and or~~ a public network address to be assigned to the mobile station.

47. (Currently Amended) An apparatus ~~computer server~~ comprising a processor and a memory storing instructions that, when executed, the apparatus is configured to:

receive a Create Packet Data Protocol (PDP) Context Request message from a Serving General Packet Radio System (GPRS) Support Node (SGSN), the Create PDP Context Request Message having an APN field containing information that explicitly indicates requesting ~~one of either~~ a private network address ~~and or~~ a public network address to be assigned to a mobile station of a network;

assign ~~one of either~~ a private network address ~~and or~~ a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

send the Create PDP Context Response message to the SGSN containing the information assigning ~~one of either~~ a private network address ~~and or~~ a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

48. (Currently Amended) An apparatus ~~computer server~~ comprising a processor and a memory storing instructions that, when executed, the apparatus is configured to:

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receive a Create PDP Context Request message from a Serving General Packet Radio System (GPRS) Support Node (SGSN) of a network, the Create PDP Context Request message having an APN field containing one or more parameters that explicitly indicates requesting ~~one of~~ either a private network address ~~and~~ or a public network address to be assigned to a mobile station of the network;

assign ~~one of~~ either a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message; and

send the Create PDP Context Response message to the SGSN containing the information assigning ~~one of~~ either a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Create PDP Context Request message.

49. (Currently Amended) An apparatus ~~mobile station~~ comprising a processor and a memory storing instructions that, when executed, the apparatus is configured to:

send an Activate Packet Data Protocol (PDP) Context Request message to a Serving General Packet Radio System (GPRS) Support Node (SGSN) of a network, the Activate PDP Context Request message having an APN field containing information containing information that explicitly indicates requesting ~~one of~~ either a private network address ~~and~~ or a public network address to be assigned to the mobile station; and

receive an Activate PDP Context Accept message containing information relating to an assignment of ~~one of~~ either a private network address ~~and~~ or a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message.

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50. (Currently Amended) The apparatus ~~mobile station~~ according to claim 49, wherein the private network address and the public network address are each one of an IPv4 network address and an IPv6 network address.

51. (Currently Amended) A system comprising:

a Serving General Packet Radio System (GPRS) Support Node (SGSN) configured to send a Create Packet Data Protocol (PDP) Context Request to a Gateway General Packet Radio System (GPRS) Support Node (GGSN) of a network, the Create PDP Context Request message having an APN field containing one or more parameters that explicitly indicates requesting ~~one of~~ either a private network address ~~and~~ or a public network address to be assigned to a mobile station of the network;

a GGSN configured to send the Create PDP Context Request message to a Border Gateway (BG); and

a BG configured to send a Create PDP Context Response message to the GGSN,

the SGSN configured to receive the Create PDP Context Response from the GGSN.

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### REMARKS/ARGUMENTS

The Office Action of October 26, 2007, has been carefully reviewed and these remarks are responsive thereto. The pending independent claims 8, 28, 31, 32, 40, 47, 48, 49, and 51 have been amended to clarify the claimed invention. Claims 8-14, 28, 31-32, 35-37, and 39-51 remain pending and allowance of these claims is respectfully requested.

#### ***Claim Rejections Under 35 U.S.C. §103(a)***

Claims 8-14, 28, 31-32, 35, 36 and 39-51 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bertrand *et al.* (U.S. patent No. 6,687,252, hereinafter “Bertrand et al.”) in view of Takeda et al. (U.S. Publication No. US 2001/0048686 A1) and further in view of Applicant’s alleged admitted prior art (as purportedly found in Applicant’s specification).

Claims 37 and 45 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al. in view of Takeda et al. and Applicant’s admitted prior art as applied to claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 above and further in view of Boudreaux (US Patent No. 6,466,556).

These rejections of the pending claims are respectfully traversed. As recognized in the Office Action, Bertrand et al. does not disclose an Activate PDP Context Request message and a Create PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. As also recognized in the Office Action, Bertrand et al. does not disclose that a public network address or private network address is assigned based on the information contained in an APN field of a Create PDP Context Request message. As recognized in the Office Action, the proposed combination of Bertrand et al. and Takeda et al. does not disclose using destination network information to assign one of a private network address and a public network address to a mobile station.

Bertrand et al. requires a Network Address Translator (NAT) when a Radius server fails to provide an IP address to a mobile terminal using a procedure that calls for a new parameter called a Conditional PDP Address (CPA) parameter being stored in the MT's Home Location Register (HLR) as part of the user subscriber data. According the Bertrand et al., the CPA parameter indicates whether the subscriber is entitled to a backup IP address in case of failure to obtain one

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over the Gi interface, and if so, it is also used to determine whether the backup IP address is a private IP address or a public IP address. According to Bertrand et al., if the backup IP address is a private IP address, **a NAT is required** as part of the GGSN's Gi interface router. See Bertrand et al. at Col. 6, lines 1-20, emphasis added. The pending claims provide methods and apparatus that avoid the requirement of a NAT, and thus avoid the shortcomings associated with a NAT-based approach.

In addition, Takeda et al. does not teach features alleged in the Office Action. More specifically, none of the cited passages in Takeda teach that the node identified in the APN (the address thereof) would explicitly (or implicitly) be equivalent to requesting a private or public network address to be assigned to a mobile station. For example, the Office Action cites to paragraphs 26-27 of Takeda et al., however reading onward, paragraphs 28-29 reveal that the process in Takeda returns to the mobile node **the IP address of the gateway node**, and not an address assigned to the mobile station itself (as recited in the present claims). Similarly are cited paragraphs 71-72 of Takeda et al., and further therein in paragraph 74 Takeda et al. teaches that the GGSN sends its own IP address to the mobile station, not an address assigned to the mobile station by which the mobile station could be reached. Similarly, the cited paragraphs 89-97 and Figure 5 of Takeda et al. fail to teach that either a private network address or a public network address would be assigned to the mobile station based on information contained in the APN field.

While Takeda et al. discloses at paragraph 94 that if no IP address is allocated to the mobile terminal, an IP address allocation procedure is indicated to the mobile terminal, and that for IP address allocation, the IPv6-compatible DHCP is used for example, **there is no indication** in Takeda that such IP address allocation involves an APN field containing information that explicitly indicates requesting either a private network address or a public network address to be assigned to the mobile station. As recognized in the Office Action (at page 12), Takeda does not disclose using destination network information to assigned (sic, assign) one of a private network address and a public network address to the mobile station. The proposed combination of Bertrand et al. and Takeda et a., even if proper, does not result in the claimed invention.

It is respectfully submitted that Applicant's specification does not contain any "AAPA" that precludes allowance of the pending claims. That the operation of Realm Specific IP (RSIP) is described in the background of the invention (*see* paragraphs [0007]-[0012], and Fig. 2 of the



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present application) does not change the fact that at the time of the present invention, the General Packet Radio System (GPRS) standard did not specify whether private or public IP addresses are assigned to a requesting MS, and that standardization is not an issue because at that time a NAT was used a PLMN boundary when private IP addresses were used. *See* paragraph [0013]-[0017] of the present application.

The pending independent claims in the application claim an “APN field containing information that explicitly indicates requesting either a private network address or a public network address to be assigned to [the/a] mobile station.” Neither Bertrand et al. or Takeda et al. or alleged AAPA in Applicant’s specification, either separately or in combination, teaches or suggests such a feature. Neither Bertrand et al., nor Takeda et al., nor alleged AAPA in Applicant’s specification provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner claimed by the Applicant.

There is no suggestion to combine Bertrand et al., Takeda et al., and alleged AAPA as advanced in the Office Action, except using Applicant’s invention as a template through a hindsight reconstruction of Applicant’s claims. “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rationale underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 431 F.3d 977, 988 (Fed. Cir. 2006), cited with approval in *KSR v. Teleflex*, 550 U.S.\_\_\_\_\_, 82 U.S.P.Q.2d 1385, 1396 (2007). The Office Action does not provide articulated reasoning with some rationale underpinning to support the legal conclusion of obviousness.

In sum, the pending independent claims are each patentable over the cited art. The pending dependent claims are patentable over the cited art for at least the same reasons as independent claims from which they depend and for the additional features recited therein. The Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection.

Appln. No. 10/017,398  
Amendment dated December 12, 2007  
Reply to Office Action of October 26, 2007

PATENT

**CONCLUSION**

All rejections having been addressed, Applicant respectfully submits that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. However, if for any reason the Examiner believes the application is not in condition for allowance or there are any questions, the Examiner is requested to contact the undersigned at (312) 463-5405.

Respectfully submitted,

Dated: December 12, 2007

By: 

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PTO/SB/06 (07-06)

Approved for use through 1/31/2007. OMB 0651-0032  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875					Application or Docket Number <b>10/017,398</b>		Filing Date <b>12/18/2001</b>		<input type="checkbox"/> To be Mailed	
<b>APPLICATION AS FILED – PART I</b>										
(Column 1)			(Column 2)		SMALL ENTITY <input type="checkbox"/>		OR		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)				
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A					
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A		N/A					
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A		N/A					
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$	=	OR	X \$	=			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$	=	OR	X \$	=			
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL		TOTAL					
<b>APPLICATION AS AMENDED – PART II</b>										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY	
AMENDMENT	12/12/2007	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 25	Minus	** 38	= 0	X \$	=	OR	X \$50=	0
	Independent (37 CFR 1.16(h))	* 9	Minus	***9	= 0	X \$	=	OR	X \$210=	0
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR			
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0	
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$	=	OR	X \$	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$	=	OR	X \$	=
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR			
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE		
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>										

Legal Instrument Examiner:  
Joy Dobbs

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,398	12/18/2001	Senthil Sengodan	005288.00014	8170
22907 7590 02/27/2008 BANNER & WITCOFF, LTD. 1100 13th STREET, N.W. SUITE 1200 WASHINGTON, DC 20005-4051			EXAMINER MATTIS, JASON E	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 02/27/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/017,398

Applicant(s)

SENGODAN, SENTHIL

Examiner

Jason E. Mattis

Art Unit

2616

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/12/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-14, 28, 31, 32, 35-37 and 39-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-14, 28, 31, 32, 35-37 and 39-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

1. This Office Action is in response to the Request for Continued Examination filed 2/12/07. Claims 8-14, 28, 31, 32, 35-37, and 39-51

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8-14, 28, 31, 32, 35, 36, and 39-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al. (U.S. Pat. 6687252 B1) in view of Takeda et al. (U.S. Publication US 2001/0048686 A1) and in further view of Applicant's admitted prior (as found in the Applicant's specification).

With respect to claims 8, 32, 40, and 49, Bertrand et al. discloses a method in a computer server apparatus executing stored instructions (**See column 4 line 31 to column 5 line 3 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network including an SGSN, which is a server apparatus executing stored instructions**). Bertrand et al. also discloses receiving an Activate PDP Context Request message at a

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SGSN from a mobile station (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN**). Bertrand et al. further discloses sending an Activate PDP Context Accept message to the mobile station containing information assigning an address to the mobile station (**See column 5 lines 52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message**). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting either a private network address or a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

With respect to claims 28, 47, and 48, Bertrand et al. discloses a method in a computer server apparatus executing stored instructions (**See column 4 line 31 to column 5 line 3 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network including an SGSN, which is a server apparatus executing stored instructions**). Bertrand et al. also discloses receiving a Create PDP Context Request message from a SGSN at a GGSN (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN**). Bertrand et al. further discloses assigning one of a private network address

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and a public network address to the mobile station and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address).**

Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting either a private network address or a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 31, Bertrand et al. discloses a method (See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network).**

Bertrand et al. also discloses receiving a Create PDP Context Request message from a SGSN at a BG (**See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request).** Bertrand et al. further discloses assigning one of a private network address and a public network



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address to the mobile station and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).**

Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting either a private network address or a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 39, Bertrand et al. discloses a method (See column 4 lines 31-37 and Figure 1 of Bertrand et al. for reference to a method for dynamically allocating IP addresses to mobile terminals in a GPRS network).**

Bertrand et al. also discloses receiving an Activate PDP Context Request message at a SGSN from a mobile station (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to a mobile terminal (MT), which is a mobile station, sending an Activate PDP Context Request message to a SGSN).** Bertrand et al. further discloses sending an Activate PDP Context Accept message to the mobile station containing information assigning an address to the mobile station (**See column 5 lines**

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**52-67 of Bertrand et al. for reference to the SGSN providing the assigned IP address to the mobile terminal using an Activate PDP Context Accept message).**

Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting either a private network address or a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claims 9 and 41, Bertrand et al. discloses sending a Create PDP Context Request message form the SGSN to a GGSN (See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request).** Bertrand et al. also discloses receiving a Create PDP Context Response message from the GGSN containing information assigning an address **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting either a private network address or a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned

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based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 10**, Bertrand et al. further discloses the SGSN sending a Create PDP Context Request message to a Gateway GPRS Support Node (GGSN) in response to the Activate PDP Context Request (**See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request**). Bertrand et al. also discloses the GGSN assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the GGSN to the SGSN containing the information assigning the address to the mobile station (**See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the GGSN assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the GGSN to the SGSN containing information assigning the address**).

Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting either a private network address or a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

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**With respect to claims 11 and 42**, Bertrand et al. discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request (See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request). Bertrand et al. also discloses sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station (See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting either a private network address or a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 12**, Bertrand et al. discloses the SGSN sending a Create PDP Context Request message to a Border Gateway (BG) in response to the Activate PDP Context Request (See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in

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**response to the SGSN receiving the Activate PDP Context Request).** Bertrand et al. also discloses the BG assigning one of a private network address and a public network address to the mobile station in response to the Create PDP Context Request message and sending a Create PDP Context Response message from the BG to the SGSN containing the information assigning the address to the mobile station **(See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to the RS assigning one of a public IP address or a private IP address to the mobile terminal in response to the Create PDP Context Request message and for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).** Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting either a private network address or a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

**With respect to claim 14,** Bertrand et al. does not disclose that the Activate PDP Context Accept message contains address assignment information based on the information contained in the APN field of the Activate PDP Context Request message.

**With respect to claim 46,** Bertrand et al. does not disclose that the information comprises one or more parameters that explicitly indicate requesting either a private network address or address to be assigned to the mobile station.

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With respect to claim 51, Bertrand et al. discloses a system comprising an SGSN configured to send a Create PDP Context Request to a GGSN of a network (See column 5 lines 4-15 and Figure 1 of Bertrand et al. for reference to an SGSN sending a Create PDP Context Request message to a GGSN in response to the SGSN receiving the Activate PDP Context Request). Bertrand et al. also discloses a GGSN configured to send the Create PDP Context Request message to a BG See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the GGSN forwarding the Create PDP Context Request message to a Radius server (RS), which is a BG). Bertrand et al. further discloses sending a Create PDP Context Response message containing the information assigning the address to the mobile station from the BG to the GGSN and from the GGSN to the SGSN (See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address). Bertrand et al. does not disclose that the Activate PDP Context Request message and the Create PDP Context Request message have an APN field containing information that explicitly indicates requesting either a private network address or a public network address. Bertrand et al. also does not disclose that the public network address or private network address is assigned based on the information contained in the APN field of the Create PDP Context Request message.

With respect to claims 8-12, 14, 28, 31, 32, 39-42, 46-49, and 51, Takeda et al., in the field of communications, discloses an Activate PDP Context Request

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message and a Create PDP Context Request message that have an APN field containing information that explicitly indicates requesting either a private network address or a public network address to be assigned to a mobile station (**See pages 2-3 paragraphs 26-27, page 5 paragraphs 71-72, pages 5-6 and 89-97, and Figure 5 of Takeda et al. for reference to an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information identifying a destination network gateway node, which is information explicitly indicating requesting either a private network address or a public network address since the destination network gateway is inherently either located within the private network of the mobile or a public network meaning the request is explicitly for the type of address needed to reach the destination node).** Using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address has the advantage of allowing address assignment to be based on the destination network that a mobile station is requesting to communicate with.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Takeda et al., to combine using an Activate PDP Context Request message and a Create PDP Context Request message that have an APN field containing information relating to a request for an address, as suggested by Takeda et al., with the system and method of Bertrand et al., with the motivation being to allow address assignment to be based on the destination network that a mobile station is requesting to communicate with.

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**With respect to claims 8-12, 14, 28, 31, 32, 39-42, 46-49, and 51,** Although Takeda et al. discloses using an APN field identifying the destination network that a mobile station wishes to communicate, the combination of Bertrand et al., and Takeda et al. does not disclose using destination network information to assign one of a private network address and a public network address to the mobile station. Applicant's admitted prior art discloses using destination network information to assign one of a private network address and a public network address to a mobile station as implicitly indicated by the destination network information **(See page 4 paragraph 8 of the Applicant's specification for reference to using information about which domain, or network, a host, or mobile station, is to be in communication with in order to determine whether to assign a private IP address or a public IP address)**. Using destination network information to assign one of a private network address and a public network address to a mobile station has the advantage of allowing a limited pool of public IP addresses to be assigned to mobile stations only when absolutely needed.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the Applicant's admitted prior art, to combine using destination network information to assign one of a private network address and a public network address to a mobile station, as suggested by the Applicant's admitted prior art, with the system and method of Bertrand et al. and Takeda et al., with the motivation being to allow a limited pool of public IP addresses to be assigned to mobile stations only when absolutely needed.



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**With respect to claim 13**, Bertrand et al. discloses sending the Create PDP Context Request message from the SGSN to a GGSN and from the GGSN to the BG (See column 5 lines 5-67 and Figure 1 of Bertrand et al. for reference to the SGSN sending a Create PDP Context Request messages to a GGSN that forwards the message to a Radius server (RS), which is a BG, in response to the SGSN receiving the Activate PDP Context Request). Bertrand et al. also discloses receiving the Create PDP Context Response message at the GGSN from the BG and at the SGSN from the GGSN (See the abstract and column 5 lines 16-67 of Bertrand et al. for reference to sending a Create PDP Context Response message from the RS through the GGSN to the SGSN containing information assigning the address).

**With respect to claims 35, 43, and 50**, Bertrand et al. discloses that address is one of an IPv4 or IPv6 network address (See column 3 lines 2-11 of Bertrand et al. for reference to assigned addresses being IP addresses, which at the time of the invention, are in the form of IPv4 or IPv6 network addresses).

**With respect to claims 36 and 44**, Bertrand et al. discloses that the network is a GPRS communications network (See column 1 lines 7-11 for reference to the system being a GPRS communications system).

4. Claims 37 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertrand et al., in view of Takeda et al., and Applicant's admitted prior art as applied to claims 1-6, 8-18, 20-26, 28-29, 31-36, and 39 above, and further in view of Boudreaux (U.S. Pat. 6466556 B1).

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Art Unit: 2616

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**With respect to claims 37 and 45**, the combination of Bertrand et al., Takeda et al., and Applicant's admitted prior art does not disclose using a Universal Mobile Telecommunications System.

**With respect to claims 37 and 45**, Boudreaux, in the field of communications discloses using a Universal Mobile Telecommunications System (**See column 1 lines 48-61 of Boudreaux for reference to using a Universal Mobile Telecommunications System**). Using a Universal Mobile Telecommunications System has the advantage of using a widely accepted and used communication system architecture.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Boudreaux, to combine using a Universal Mobile Telecommunications System, as suggested by Boudreaux, with the system and method of Bertrand et al., Takeda et al., and Applicant's admitted prior art, with the motivation being to use a widely accepted and used communication system architecture.

### ***Response to Arguments***

5. Applicant's arguments filed 12/12/07 have been fully considered but they are not persuasive.

In response to Applicant's argument that the combination of Bertrand et al., Takeda et al., and the Applicant's admitted prior art, does not render obvious the claim

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10/017,398  
Art Unit: 2616

Page 15

limitation stating, "the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting either a private network address or a public network address be assigned to the mobile station", the Examiner respectfully disagrees. First, it is noted that the above quoted limitation is broader than the Applicant argues. It appears the Applicant believes the above quoted limitation to be equivalent to a limitation requiring the APN field to have information that explicitly states that a private network address is requested instead of a public network address or to have information that explicitly states that a public network address is requested instead of a private network address; however, the Examiner disagrees with this narrow interpretation of the claim limitation. Since an address must be either a public address or a private address, any APN field information that requests an address does explicitly indicate requesting either a private network address or a public network address, as claimed. As shown in the rejections above, Takeda et al. discloses an Activate PDP Context Request message that has an APN field containing information that indicates requesting an address to be assigned to a mobile station (See pages 2-3 paragraphs 26-27, page 5 paragraphs 71-72, pages 5-6 and 89-97, and Figure 5 of Takeda et al. for reference to an Activate PDP Context Request message that has an APN field containing information requesting an address for a mobile terminal if no address is allocated to the mobile terminal). The address being requested in Takeda et al. must be either a public network address or a private network address, thus, the APN field information of Takeda et al. does explicitly indicate requesting either a private network address or a public network address be assigned to the mobile station, as claimed. It is

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10/017,398  
Art Unit: 2616

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recommended that the above quoted limitation be amended in the claims such that it is more in line with the interpretation argued by the Applicant. If there is any confusion as to how the current limitation is being interpreted by the Examiner, please call the Examiner at the telephone number listed below, in order to clear up this confusion.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:  
10/017,398  
Art Unit: 2616

Page 17

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'jem', with a stylized, flowing script.

Jason E Mattis  
Examiner  
Art Unit 2616

jem

**Index of Claims**

Application/Control No.

10/017,398

Examiner

Jason E. Mattis

Applicant(s)/Patent under  
Reexamination

SENGODAN, SENTHIL

Art Unit

2616

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date									
Final	Original	2/19/08									
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**Search Notes**

Application/Control No.

10/017,398

Examiner

Jason E. Mattis

Applicant(s)/Patent under  
Reexamination

SENGODAN, SENTHIL

Art Unit

2616

**SEARCHED**

Class	Subclass	Date	Examiner

**INTERFERENCE SEARCHED**

Class	Subclass	Date	Examiner

**SEARCH NOTES  
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
Updated text search of previous areas	2/19/2008	JM

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

(Attorney Docket No. 005288.00014)

In re U.S. Patent Application of	)	
Senthil SENGODAN	)	
	)	Art Unit: 2616
Application No. 10/017,398	)	
	)	Examiner: Mattis, Jason E.
Filed: December 18, 2001	)	
	)	Confirmation No. 8170
For: Method and Apparatus for Address	)	
Allocation in GPRS Networks That	)	
Facilitates End-To-End Security	)	

**PRE-APPEAL BRIEF REQUEST FOR REVIEW****Box Appeal Briefs - Patents**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-14501

Applicant respectfully requests review of the non-final rejections in the above-identified application. No amendments are being filed with this request. The review is requested for the reasons stated in the below remarks. If any fees are required or if an overpayment is made, the Commissioner is authorized to debit or credit our Deposit Account No. 19-0733, accordingly.

***Remarks***

Having received and reviewed the Office Action (02-27-08), and since the claims have been twice rejected, Applicant files this pre-appeal brief in accordance with 37 CFR 41.31(a), and respectfully submits that the standing rejections are based on one or more clear errors, and that the appeal process can be avoided through a pre-appeal brief review as set forth in the Official Gazette notice of July 12, 2005.

The specific errors relied upon in this Request for Review include the following:

- The pending 35 U.S.C. §103(a) rejections fail to address all the claim limitations; and
- The Bertrand reference (U.S. Publ. No. 6,687,252), the Takeda reference (U.S. Publication US 2001/0048686 A1), and the alleged Applicant's admitted prior art



(AAPA) fails to disclose the subject matter of the rejected claims 8-14, 28, 31, 32, 35, 36 and 39-51 (sic, 39-44 and 46-51).

- The Bertrand reference (U.S. Publ. No. 6,687,252), the Takeda reference (U.S. Publication US 2001/0048686 A1), and the alleged Applicant's admitted prior art (AAPA) as applied to 1-6, 8-18, 20-26, 28-29, 31-36, and 39, and further in view of Boudreaux (US Patent No. 6,466,556) fail to disclose the subject matter of the rejected claims 37 and 45.

**The Office Action Has Not Addressed All Features of Applicant's Claims in the Rejections Under 35 USC §103(a)**

Claims 8-14, 28, 31, 32, 35, 36 and 39-51 (sic, 39-44, and 46-51) were rejected under 35 USC §103(a) as being unpatentable over Bertrand reference (U.S. Publ. No. 6,687,252), the Takeda reference (U.S. Publication US 2001/0048686 A1), and the alleged Applicant's admitted prior art (AAPA).

Independent claim 8 substantively recites: "A method comprising: receiving an Activate Packet Data Protocol (PDP) Context Request message at a Serving General Packet Radio System (GPRS) Support Node (SGSN) of a network from a mobile station of the network, the Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting either a private network address or a public network address to be assigned to the mobile station; and sending an Activate PDP Context Accept message to the mobile station containing information assigning one of a private network address and a public network address to the mobile station based on the information contained in the APN field of the Activate PDP Context Request message."

Independent claims 28, 31, 32, 40, 47, 48, and 51 substantively recite features including either an "Activate" or a "Create PDP Context Request message having an APN field containing information that explicitly indicates requesting either a private network address or a public network address to be assigned to a [or "the"] mobile station" of a network.

Regarding independent claims 8, 28, 31, 32, 40, 47, 48, and 51, the Office Action has ignored the words "explicitly indicates requesting either a private network address or a public

network address to be assigned to the mobile station.” As recognized in the Office Action, Bertrand et al. does not disclose an Activate PDP Context Request message and a Create PDP Context Request message having an APN field containing information that explicitly indicates requesting one of a private network address and a public network address. As also recognized in the Office Action, Bertrand et al. does not disclose that a public network address or private network address is assigned based on the information contained in an APN field of a Create PDP Context Request message. As recognized in the Office Action, the proposed combination of Bertrand et al. and Takeda et al. does not disclose using destination network information to assign one of a private network address and a public network address to a mobile station.

Bertrand et al. requires a Network Address Translator (NAT) when a Radius server fails to provide an IP address to a mobile terminal using a procedure that calls for a new parameter called a Conditional PDP Address (CPA) parameter being stored in the MT's Home Location Register (HLR) as part of the user subscriber data. According to the Bertrand et al., the CPA parameter indicates whether the subscriber is entitled to a backup IP address in case of failure to obtain one over the Gi interface, and if so, it is also used to determine whether the backup IP address is a private IP address or a public IP address. According to Bertrand et al., if the backup IP address is a private IP address, **a NAT is required** as part of the GGSN's Gi interface router. See Bertrand et al. at Col. 6, lines 1-20, emphasis added. The pending claims provide methods and apparatus that avoid the requirement of a NAT, and thus avoid the shortcomings associated with a NAT-based approach.

In addition, Takeda et al. does not teach features alleged in the Office Action. More specifically, none of the cited passages in Takeda teach that the node identified in the APN (the address thereof) would explicitly (or implicitly) be equivalent to requesting a private or public network address to be assigned to a mobile station. For example, the Office Action cites to paragraphs 26-27 of Takeda et al., however reading onward, paragraphs 28-29 reveal that the process in Takeda returns to the mobile node **the IP address of the gateway node**, and not an address assigned to the mobile station itself (as recited in the present claims). Similarly are cited paragraphs 71-72 of Takeda et al., and further therein in paragraph 74 Takeda et al. teaches that the GGSN sends its own IP address to the mobile station, not an address assigned to the mobile station by which the mobile station could be reached. Similarly, the cited paragraphs 89-97 and Figure 5 of Takeda et al. fail to teach that either a private network address or a public network

address would be assigned to the mobile station based on information contained in the APN field.

While Takeda et al. discloses at paragraph 94 that if no IP address is allocated to the mobile terminal, an IP address allocation procedure is indicated to the mobile terminal, and that for IP address allocation, the IPv6-compatible DHCP is used for example, **there is no indication** in Takeda that such IP address allocation involves an APN field containing information that explicitly indicates requesting either a private network address or a public network address to be assigned to the mobile station. As recognized in the Office Action (at page 12), Takeda does not disclose using destination network information to assigned (sic, assign) one of a private network address and a public network address to the mobile station. The proposed combination of Bertrand et al. and Takeda et al., even if proper, does not result in the claimed invention.

It is respectfully submitted that Applicant's specification does not contain any "AAPA" that precludes allowance of the pending claims. That the operation of Realm Specific IP (RSIP) is described in the background of the invention (*see* paragraphs [0007]-[0012], and Fig. 2 of the present application) does not change the fact that at the time of the present invention, the General Packet Radio System (GPRS) standard did not specify whether private or public IP addresses are assigned to a requesting MS, and that standardization is not an issue because at that time a NAT was used a PLMN boundary when private IP addresses were used. *See* paragraph [0013]-[0017] of the present application. The "AAPA" in para. [0008] just discusses the concepts of public and private addresses, and a NAT. It is silent on allocating a private or public address based on an identity of a destination host. If the Office Action was correct, the NAT would not need to be used in para. [0008].

The pending independent claims in the application claim an "APN field containing information that explicitly indicates requesting either a private network address or a public network address to be assigned to [the/a] mobile station." Neither Bertrand et al. or Takeda et al. or alleged AAPA in Applicant's specification, either separately or in combination, teaches or suggests such a feature. Nor does Boudreaux. Neither Bertrand et al., nor Takeda et al., nor alleged AAPA in Applicant's specification provides any independent motivation or suggestion to combine the use of APNs with the assignment of network addresses in the manner claimed by the Applicant. Nor does Boudreaux.

There is no suggestion to combine Bertrand et al., Takeda et al., and alleged AAPA, or that proposed combination with Boudreaux, as advanced in the Office Action, except using

Applicant's invention as a template through a hindsight reconstruction of Applicant's claims. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rationale underpinning to support the legal conclusion of obviousness." *In re Kahn*, 431 F.3d 977, 988 (Fed. Cir. 2006), cited with approval in *KSR v. Teleflex*, 550 U.S. \_\_\_, 82 U.S.P.Q.2d 1385, 1396 (2007). The Office Action does not provide articulated reasoning with some rationale underpinning to support the legal conclusion of obviousness.

In sum, the pending independent claims are each patentable over the cited art. The pending dependent claims are patentable over the cited art for at least the same reasons as independent claims from which they depend and for the additional features recited therein. The Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection.

### CONCLUSION

While Applicant believes the above points represent the clearest errors made by the Office, Applicant reserves the right to appeal on other bases and errors should the appeal of this case proceed after the Office's consideration of this paper. All issues having been addressed, Applicant respectfully submits that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. However, if for any reason the review panel believes the application is not in condition for allowance or there are any questions, the review panel is invited to contact the undersigned at (312) 463-5405.

Respectfully submitted,

Dated: April 9, 2008

By: 

Robert H. Resis  
Registration No. 32,168  
BANNER & WITCOFF, LTD.  
10 South Wacker Drive, Suite 3000  
Chicago, IL 60606

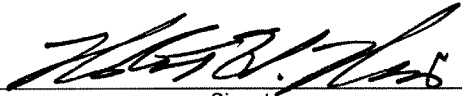
Doc Code: AP.PRE.REQ

PTO/SB/33 (07-05)

Approved for use through xx/xx/200x. OMB 0651-00xx

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PRE-APPEAL BRIEF REQUEST FOR REVIEW</b>		Docket Number (Optional) 005288.00014	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]  On _____  Signature _____  Typed or printed name _____		Application Number 10/017,398	Filed 12/18/2001
		First Named Inventor  Senthil Sengodan	
		Art Unit 2616	Examiner Mattis, Jason E.
Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.			
This request is being filed with a notice of appeal.			
The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.			
I am the  <input type="checkbox"/> applicant/inventor.  <input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)  <input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>32,168</u>  <input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____		<div style="text-align: center;">             Signature         </div> <div style="text-align: center;">           Robert H. Resis            Typed or printed name         </div> <div style="text-align: center;">           (312) 463-5000            Telephone number         </div> <div style="text-align: center;">           04/09/2008            Date         </div>	
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.			

☒ \*Total of 1 \_\_\_\_\_ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/31 (04-07)

Approved for use through 03/31/07. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**NOTICE OF APPEAL FROM THE EXAMINER TO  
THE BOARD OF PATENT APPEALS AND INTERFERENCES**Docket Number (Optional)  
005288.00014

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]  
on \_\_\_\_\_

Signature \_\_\_\_\_

Typed or printed  
name \_\_\_\_\_

In re Application of

Senthil Sengodan

Application Number

10/017,398

Filed

12/18/2001

For Method and Apparatus for Address Allocation in GPRS  
Networks That Facilitates End-to-End Security

Art Unit

2616

Examiner

Mattis, Jason E.

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1))

\$ 510.00

☐ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is: \$ \_\_\_\_\_

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account. I have enclosed a duplicate copy of this sheet.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **19-0733**. I have enclosed a duplicate copy of this sheet.

☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.  
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  
(Form PTO/SB/96)

☒ attorney or agent of record.  
Registration number 32,168

☐ attorney or agent acting under 37 CFR 1.34.  
Registration number if acting under 37 CFR 1.34. \_\_\_\_\_



Signature

Robert H. Resis

Typed or printed name

(312) 463-5000

Telephone number

04/09/2008

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below\*.

☒ \*Total of 1 forms are submitted.

This collection of information is required by 37 CFR 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	10017398			
<b>Filing Date:</b>	18-Dec-2001			
<b>Title of Invention:</b>	Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security			
First Named Inventor/Applicant Name:	Senthil Sengodan			
<b>Filer:</b>	Robert H. Resis/Alma Bahena			
<b>Attorney Docket Number:</b>	005288.00014			
Filed as Large Entity				
<b>Utility      Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
Notice of appeal	1401	1	510	510
Post-Allowance-and-Post-Issuance:				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				510



**Electronic Acknowledgement Receipt**

<b>EFS ID:</b>	3127773
<b>Application Number:</b>	10017398
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	8170
<b>Title of Invention:</b>	Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security
<b>First Named Inventor/Applicant Name:</b>	Senthil Sengodan
<b>Customer Number:</b>	22907
<b>Filer:</b>	Robert H. Resis/Alma Bahena
<b>Filer Authorized By:</b>	Robert H. Resis
<b>Attorney Docket Number:</b>	005288.00014
<b>Receipt Date:</b>	09-APR-2008
<b>Filing Date:</b>	18-DEC-2001
<b>Time Stamp:</b>	17:16:00
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$510
RAM confirmation Number	2457
Deposit Account	190733
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

## File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Pre-Brief Conference request	PreAppeal14.pdf	448757	no	6
			8276d9de90bd6f736dcd659a3a2462a7200e468a		
Warnings:					
Information:					
2	Notice of Appeal Filed	NoticeAppeal14.pdf	93027	no	1
			31ce11c4c07e8ef8b6584f49e02bee9984797102		
Warnings:					
Information:					
3	Fee Worksheet (PTO-06)	fee-info.pdf	8186	no	2
			1f0ac593cc8beff692ce083e1b500b4f37cc4d8e		
Warnings:					
Information:					
Total Files Size (in bytes):			549970		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

### New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

### National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

### New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



## UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,398	12/18/2001	Senthil Sengodan	005288.00014	8170

22907 7590 06/10/2008  
BANNER & WITCOFF, LTD.  
1100 13th STREET, N.W.  
SUITE 1200  
WASHINGTON, DC 20005-4051

EXAMINER
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MATTIS, JASON E

ART UNIT	PAPER NUMBER
----------	--------------

2616


MAIL DATE	DELIVERY MODE
-----------	---------------

06/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Application Number</b> 	<b>Application/Control No.</b> 10/017,398 FIRMIN BACKER	<b>Applicant(s)/Patent under Reexamination</b> SENGODAN, SENTHIL <b>Art Unit</b> 2616
<b>Document Code - AP.PRE.DEC</b>		

## Notice of Panel Decision from Pre-Appeal Brief Review



This is in response to the Pre-Appeal Brief Request for Review filed April 9<sup>th</sup>, 2008.

1. ☐ **Improper Request** – The Request is improper and a conference will not be held for the following reason(s):

- ☐ The Notice of Appeal has not been filed concurrent with the Pre-Appeal Brief Request.
- ☐ The request does not include reasons why a review is appropriate.
- ☐ A proposed amendment is included with the Pre-Appeal Brief request.
- ☐ Other:

The time period for filing a response continues to run from the receipt date of the Notice of Appeal or from the mail date of the last Office communication, if no Notice of Appeal has been received.

2. ☐ **Proceed to Board of Patent Appeals and Interferences** – A Pre-Appeal Brief conference has been held. The application remains under appeal because there is at least one actual issue for appeal. Applicant is required to submit an appeal brief in accordance with 37 CFR 41.37. The time period for filing an appeal brief will be reset to be one month from mailing this decision, or the balance of the two-month time period running from the receipt of the notice of appeal, whichever is greater. Further, the time period for filing of the appeal brief is extendible under 37 CFR 1.136 based upon the mail date of this decision or the receipt date of the notice of appeal, as applicable.

- ☐ The panel has determined the status of the claim(s) is as follows:
- Claim(s) allowed: \_\_\_\_\_
- Claim(s) objected to: \_\_\_\_\_
- Claim(s) rejected: \_\_\_\_\_
- Claim(s) withdrawn from consideration: \_\_\_\_\_

3. ☐ **Allowable application** – A conference has been held. The rejection is withdrawn and a Notice of Allowance will be mailed. Prosecution on the merits remains closed. No further action is required by applicant at this time.

4. ☒ **Reopen Prosecution** – A conference has been held. The rejection is withdrawn and a new Office action will be mailed. No further action is required by applicant at this time.

All participants:

(1) FIRMIN BACKER. *F.B.*

(3) \_\_\_\_\_.

(2) Jason Matis. *Jm*

(4) \_\_\_\_\_.



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## NOTICE OF ALLOWANCE AND FEE(S) DUE

22907 7590 08/21/2008

BANNER & WITCOFF, LTD.  
 1100 13th STREET, N.W.  
 SUITE 1200  
 WASHINGTON, DC 20005-4051

EXAMINER

MATTIS, JASON E

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 08/21/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/017,398

12/18/2001

Senthil Sengodan

005288.00014

8170

TITLE OF INVENTION: METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS NETWORKS THAT FACILITATES END-TO-END SECURITY

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	11/21/2008

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

## HOW TO REPLY TO THIS NOTICE:

## I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax** **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

22907 7590 08/21/2008

**BANNER & WITCOFF, LTD.**  
**1100 13th STREET, N.W.**  
**SUITE 1200**  
**WASHINGTON, DC 20005-4051**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/017,398 12/18/2001 Senthil Sengodan 005288.00014 8170

TITLE OF INVENTION: METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS NETWORKS THAT FACILITATES END-TO-END SECURITY

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	11/21/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
MATTIS, JASON E	2616	370-395300

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,398	12/18/2001	Senthil Sengodan	005288.00014	8170
22907	7590	08/21/2008	EXAMINER	
BANNER & WITCOFF, LTD. 1100 13th STREET, N.W. SUITE 1200 WASHINGTON, DC 20005-4051			MATTIS, JASON E	
			ART UNIT	PAPER NUMBER
			2616	
DATE MAILED: 08/21/2008				

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**  
 (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 994 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 994 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/017,398	SENGODAN, SENTHIL	
	<b>Examiner</b>	<b>Art Unit</b>	
	JASON E. MATTIS	2616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Pre-Brief Request filed 4/9/08.

2. ☒ The allowed claim(s) is/are 8-14, 28, 31, 32, 35-37, and 39-51 renumbered as claims 1-7, 9-14, 8, and 15-26 respectively.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.

(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached

1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.

(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material	5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date ____ . 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____.
--	--

/FIRMIN BACKER/  
Supervisory Patent Examiner, Art Unit 2616



Application/Control Number: 10/017,398  
Art Unit: 2616

Page 2

### **DETAILED ACTION**

1. This Office Action is in response to the Pre-Brief Conference Request filed 4/9/08. Claims 8-14, 28, 31, 32, 35-37, and 39-51 are currently pending in the application.

### **EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

#### **IN THE CLAIMS:**

In line 4 of claim 8, the phrase "(Access Point Name)" has been inserted between the words "APN" and "filed" such that this section now reads as follows:

“...APN (Access Point Name) field ...”

In line 5 of claim 28, the phrase "(Access Point Name)" has been inserted between the words "APN" and "filed" such that this section now reads as follows:

Application/Control Number: 10/017,398  
Art Unit: 2616

Page 3

“...APN (Access Point Name) field ...”

In line 4 of claim 31, the phrase “(Access Point Name)” has been inserted between the words "APN" and "filed" such that this section now reads as follows:

“...APN (Access Point Name) field ...”

In line 4 of claim 32, the phrase “(Access Point Name)” has been inserted between the words "APN" and "filed" such that this section now reads as follows:

“...APN (Access Point Name) field ...”

In line 4 of claim 40, the phrase “(Access Point Name)” has been inserted between the words "APN" and "filed" such that this section now reads as follows:

“...APN (Access Point Name) field ...”

In line 5 of claim 47, the phrase “(Access Point Name)” has been inserted between the words "APN" and "filed" such that this section now reads as follows:

“...APN (Access Point Name) field ...”

In line 5 of claim 48, the phrase “(Access Point Name)” has been inserted between the words "APN" and "filed" such that this section now reads as follows:

“...APN (Access Point Name) field ...”

Application/Control Number: 10/017,398  
Art Unit: 2616

Page 4

In line 5 of claim 49, the phrase “(Access Point Name)” has been inserted between the words "APN" and "filed" such that this section now reads as follows:

“...APN (Access Point Name) field ...”

In line 5 of claim 51, the phrase “(Access Point Name)” has been inserted between the words "APN" and "filed" such that this section now reads as follows:

“...APN (Access Point Name) field ...”

***Allowable Subject Matter***

3. Claims 8-14, 28, 31, 32, 35-37, and 39-51 are allowed.

4. The following is a statement of reasons for the indication of allowable subject matter: Independent claims 8, 28, 31, 32, 40, 47, 48, 49, and 51 are allowable since none of the prior art of record discloses or renders obvious the limitations regarding sending or receiving an Activate PDP Context Request message having an APN field containing information that explicitly indicates requesting either a private or a public network address and assigning an address based on the information contained in the APN field. The closest prior art of record, Bertrand et al. (U.S. Pat. 6687252 B1), discloses assigning an address in response to an Activate PDP Context Request message having an APN field, but the APN field does not have any information explicitly indicating a public or private address, as claimed.

Application/Control Number: 10/017,398  
Art Unit: 2616

Page 5

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON E. MATTIS whose telephone number is (571)272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on (571)272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JEM

/FIRMIN BACKER/  
Supervisory Patent Examiner, Art Unit 2616



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## BIB DATA SHEET

CONFIRMATION NO. 8170

<b>SERIAL NUMBER</b> 10/017,398	<b>FILING or 371(c) DATE</b> 12/18/2001 <b>RULE</b>	<b>CLASS</b> 370	<b>GROUP ART UNIT</b> 2616	<b>ATTORNEY DOCKET NO.</b> 005288.00014	
<b>APPLICANTS</b> Senthil Sengodan, Burlington, MA; <b>** CONTINUING DATA *****</b> none /JM/ 7/10/06 <b>** FOREIGN APPLICATIONS *****</b> <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **</b> 01/17/2002					
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input type="checkbox"/> No Verified and Acknowledged <u>/JASON E MATTIS/</u> Examiner's Signature	<input type="checkbox"/> Met after Allowance Initials	<b>STATE OR COUNTRY</b> MA	<b>SHEETS DRAWINGS</b> 6	<b>TOTAL CLAIMS</b> 38	<b>INDEPENDENT CLAIMS</b> 7
<b>ADDRESS</b> BANNER & WITCOFF, LTD. 1100 13th STREET, N.W. SUITE 1200 WASHINGTON, DC 20005-4051 UNITED STATES					
<b>TITLE</b> Method and apparatus for address allocation in GPRS networks that facilitates end-to-end security					
<b>FILING FEE RECEIVED</b> 1800	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		

[illegible]

/Jason Mattis/ 8/12/08 (Assistant Examiner) (Date)		Total Claims Allowed: 26	
/Firmin Backer/ SPE 2616 8/18/08 (Primary Examiner) (Date)		O.G. Print Claim(s) 8	O.G. Print Figure 5


<b>Search Notes</b>  	<b>Application/Control No.</b>  10017398	<b>Applicant(s)/Patent Under Reexamination</b>  SENGODAN, SENTHIL
	<b>Examiner</b>  JASON E MATTIS	<b>Art Unit</b>  2616

SEARCHED			
Class	Subclass	Date	Examiner
370	395.3	8/11/08	JM
370	349	8/11/08	JM
370	474	8/11/08	JM

SEARCH NOTES		
Search Notes	Date	Examiner
Text search including 370/229-230, 276-278, 310-350, 389, 395.3-395.54, 400, 474-475	7/10/06	JM
Inventor serach	7/10/06	JM
Updated text search of previous areas	11/27/06	JM
Updated text search of previous areas	2/19/08	JM
Updated Inventor search	8/7/08	JM
Updated text search of previous areas	8/7/08	JM
Consulted with SPE Firmin Backer about allowable subject matter	8/7/08	JM
Consulted with SPE Chau Nguyen about allowable subject matter	8/11/08	JM

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
370	249, 395.3, 474	8/11/08	JM


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<b><i>Index of Claims</i></b>  	<b>Application/Control No.</b>  10017398	<b>Applicant(s)/Patent Under Reexamination</b>  SENGODAN, SENTHIL
	<b>Examiner</b>  JASON E MATTIS	<b>Art Unit</b>  2616

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant			<input type="checkbox"/> CPA			<input type="checkbox"/> T.D.			<input type="checkbox"/> R.1.47		
CLAIM		DATE									
Final	Original	08/12/2008									
	1										
	2										
	3										
	4										
	5										
	6										
	7										
1	8	=									
2	9	=									
3	10	=									
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6	13	=									
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	15										
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10	31	=									
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	33										
	34										
12	35	=									
13	36	=									



<b><i>Index of Claims</i></b>  	<b>Application/Control No.</b>  10017398	<b>Applicant(s)/Patent Under Reexamination</b>  SENGODAN, SENTHIL
	<b>Examiner</b>  JASON E MATTIS	<b>Art Unit</b>  2616

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant			<input type="checkbox"/> CPA			<input type="checkbox"/> T.D.			<input type="checkbox"/> R.1.47		
CLAIM		DATE									
Final	Original	08/12/2008									
14	37	=									
	38										
8	39	=									
15	40	=									
16	41	=									
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20	45	=									
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22	47	=									
23	48	=									
24	49	=									
25	50	=									
26	51	=									

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	"20010048686"	US-PGPUB; USPAT	OR	ON	2006/07/10 09:23
S2	1	"6687252".pn.	US-PGPUB; USPAT	OR	ON	2006/07/06 08:40
S3	13	(@ad<"20011018" or @rlad<"20011018") and (GPRS) and (public adj address)	US-PGPUB; USPAT	OR	ON	2006/07/10 09:24
S4	12	(@ad<"20011018" or @rlad<"20011018") and (GPRS) and (public adj address) and (private adj address)	US-PGPUB; USPAT	OR	ON	2006/07/10 09:24
S5	3	(@ad<"20011018" or @rlad<"20011018") and (GPRS) and (public adj address) with (private adj address)	US-PGPUB; USPAT	OR	ON	2006/07/10 10:20
S6	156	(@ad<"20011018" or @rlad<"20011018") and (GPRS) with UMTS and (PDP)	US-PGPUB; USPAT	OR	ON	2006/07/10 10:20
S7	108	(@ad<"20011018" or @rlad<"20011018") and (GPRS) with UMTS and (PDP with request)	US-PGPUB; USPAT	OR	ON	2006/07/10 10:21
S8	106	(@ad<"20011018" or @rlad<"20011018") and (GPRS) with UMTS and (PDP with request with context)	US-PGPUB; USPAT	OR	ON	2006/11/27 13:49
S9	83	(@ad<"20011018" or @rlad<"20011018") and (request\$3 with private near2 address and public near2 address)	US-PGPUB; USPAT	OR	ON	2007/05/14 13:22
S10	27	(@ad<"20011018" or @rlad<"20011018") and (request\$3 with private near2 address with public near2 address)	US-PGPUB; USPAT	OR	ON	2006/11/27 13:50

S11	1	(@ad<"20011018" or @rlad<"20011018") and (explicit\$2 with request)	US-PGPUB; USPAT	OR	ON	2007/05/14 13:22
S12	0	(@ad<"20011018" or @rlad<"20011018") and (explicit\$2 with (public or private) with (address or ID))	US-PGPUB; USPAT	OR	ON	2007/05/14 13:23
S13	1166	(@ad<"20011018" or @rlad<"20011018") and (request\$3 with (public or private) with (address or ID))	US-PGPUB; USPAT	OR	ON	2007/05/14 13:23
S14	129	(@ad<"20011018" or @rlad<"20011018") and (request\$3 with (public or private) with (address or ID) with identif\$3)	US-PGPUB; USPAT	OR	ON	2007/05/14 13:24
S15	161	(@ad<"20011018" or @rlad<"20011018") and (request\$3 with (public or private) with (address or ID) with identif\$4)	US-PGPUB; USPAT	OR	ON	2007/05/14 13:24
S16	25	(@ad<"20011018" or @rlad<"20011018") and (request\$3 with (public or private) adj2 (address or ID) with identif\$4)	US-PGPUB; USPAT	OR	ON	2007/05/16 11:27
S17	1	"20030035397".pn.	US-PGPUB; USPAT	OR	ON	2007/05/14 13:39
S18	12	(@ad<"20011018" or @rlad<"20011018") and (APN adj field)	US-PGPUB; USPAT	OR	ON	2007/05/16 11:27
S19	22	(@ad<"20011018" or @rlad<"20011018") and (APN with field)	US-PGPUB; USPAT	OR	ON	2007/05/16 11:27
S20	22	(@ad<"20011018" or @rlad<"20011018") and (APN with field)	US-PGPUB; USPAT	OR	ON	2007/05/16 11:29
S21	129	(@ad<"20011018" or @rlad<"20011018") and (Activate with PDP with context with request)	US-PGPUB; USPAT	OR	ON	2007/05/16 11:29
S22	43	(@ad<"20011018" or @rlad<"20011018") and (Activate with PDP with context with request) same APN	US-PGPUB; USPAT	OR	ON	2007/05/16 11:29

S23	3	(@ad<"20011018" or @rlad<"20011018") and (Activate with PDP with context with request) same APN and ((private or public) with (address or ID or identification))	US-PGPUB; USPAT	OR	ON	2007/05/16 11:32
S24	10	(@ad<"20011018" or @rlad<"20011018") and (Activate with PDP with context with request) and ((private or public) with (address or ID or identification))	US-PGPUB; USPAT	OR	ON	2007/05/16 11:32
S25	2	(@ad<"20011018" or @rlad<"20011018") and (Activate with PDP with context with request) and ((private or public) with (address or ID or identification)) same APN	US-PGPUB; USPAT	OR	ON	2007/05/16 11:32
S26	599	(@ad<"20011018" or @rlad<"20011018") and (APN or (access adj point adj name))	US-PGPUB; USPAT	OR	ON	2008/08/07 12:50
S27	89	(@ad<"20011018" or @rlad<"20011018") and (APN or (access adj point adj name)) with request	US-PGPUB; USPAT	OR	ON	2008/08/07 12:50
S28	71	(@ad<"20011018" or @rlad<"20011018") and (APN or (access adj point adj name)) with request and (public or private)	US-PGPUB; USPAT	OR	ON	2008/08/07 12:50
S29	2	(@ad<"20011018" or @rlad<"20011018") and (APN or (access adj point adj name)) with request same (public or private)	US-PGPUB; USPAT	OR	ON	2008/08/07 12:51
S30	109	(@ad<"20011018" or @rlad<"20011018") and (explicit\$3) with request same (public or private)	US-PGPUB; USPAT	OR	ON	2008/08/07 12:51
S31	23	(@ad<"20011018" or @rlad<"20011018") and (explicit\$3) with request with (public or private)	US-PGPUB; USPAT	OR	ON	2008/08/07 12:51

S32	0	(@ad<"20011018" or @rlad<"20011018") and (explicit\$3) with request with (public or private) with (activate adj packet adj dta adj protocol)	US-PGPUB; USPAT	OR	ON	2008/08/07 12:52
S33	0	(@ad<"20011018" or @rlad<"20011018") and (explicit\$3) with request with (public or private) and (activate adj packet adj dta adj protocol)	US-PGPUB; USPAT	OR	ON	2008/08/07 12:52
S34	0	(@ad<"20011018" or @rlad<"20011018") and (explicit\$3) with request with (public or private) and (PDP)	US-PGPUB; USPAT	OR	ON	2008/08/07 12:52
S35	23	(@ad<"20011018" or @rlad<"20011018") and (explicit\$3) with request with (public or private)	US-PGPUB; USPAT	OR	ON	2008/08/07 12:53
S36	40	(@ad<"20011018" or @rlad<"20011018") and request with (public or private) and (PDP)	US-PGPUB; USPAT	OR	ON	2008/08/07 12:53
S37	5	(@ad<"20011018" or @rlad<"20011018") and request with (public or private) same (PDP)	US-PGPUB; USPAT	OR	ON	2008/08/07 12:53
S38	195	(@ad<"20011018" or @rlad<"20011018") and (public or private) same (PDP)	US-PGPUB; USPAT	OR	ON	2008/08/07 13:00
S39	65	(@ad<"20011018" or @rlad<"20011018") and (public or private) with (PDP)	US-PGPUB; USPAT	OR	ON	2008/08/07 13:00
S40	12	(@ad<"20011018" or @rlad<"20011018") and (public or private) with (APN)	US-PGPUB; USPAT	OR	ON	2008/08/07 13:00
S41	92	(@ad<"20011018" or @rlad<"20011018") and (PDP) with (APN)	US-PGPUB; USPAT	OR	ON	2008/08/07 13:03
S42	66	(@ad<"20011018" or @rlad<"20011018") and (PDP) with (APN) with address	US-PGPUB; USPAT	OR	ON	2008/08/07 13:03

S43	70	(@ad<"20011018" or @rlad<"20011018") and (PDP) with (APN) with (address or ID or identification)	US-PGPUB; USPAT	OR	ON	2008/08/07 13:03
S44	12	(@ad<"20011018" or @rlad<"20011018") and (PDP) with (APN) with (address or ID or identification) and (public with private)	US-PGPUB; USPAT	OR	ON	2008/08/07 13:04
S45	5	("7342888" "7290141" "6823461" "6366961" "6490275").pn.	US-PGPUB; USPAT	OR	ON	2008/08/07 13:15

8/12/08 3:19:04 PM

C:\Documents and Settings\jmattis\My Documents\EAST\Workspaces\10017398.wsp

## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 or **Fax** (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

22907 7590 08/21/2008

BANNER & WITCOFF, LTD.  
 1100 13th STREET, N.W.  
 SUITE 1200  
 WASHINGTON, DC 20005-4051

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,398	12/18/2001	Senthil Sengodan	005288.00014	8170

TITLE OF INVENTION: METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS NETWORKS THAT FACILITATES END-TO-END SECURITY

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	11/21/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
MATTIS, JASON E	2616	370-395300

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Banner & Witcoff, Ltd.

2

3

## 3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Nokia Corporation

Espoo, Finland

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

## 4a. The following fee(s) are submitted:

- ☒ Issue Fee
- ☒ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies

## 4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

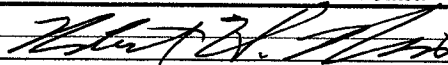
- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 19-0733 (enclose an extra copy of this form).

## 5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature



Date 9-18-08

Typed or printed name Robert H. Resis

Registration No. 32,168

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	10017398			
<b>Filing Date:</b>	18-Dec-2001			
<b>Title of Invention:</b>	METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS NETWORKS THAT FACILITATES END-TO-END SECURITY			
<b>First Named Inventor/Applicant Name:</b>	Senthil Sengodan			
<b>Filer:</b>	Robert H. Resis/Alma Bahena			
<b>Attorney Docket Number:</b>	005288.00014			
Filed as Large Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
Utility Appl issue fee	1501	1	1440	1440
Publ. Fee- early, voluntary, or normal	1504	1	300	300



Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1740

**Electronic Acknowledgement Receipt**

<b>EFS ID:</b>	3966293
<b>Application Number:</b>	10017398
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	8170
<b>Title of Invention:</b>	METHOD AND APPARATUS FOR ADDRESS ALLOCATION IN GPRS NETWORKS THAT FACILITATES END-TO-END SECURITY
<b>First Named Inventor/Applicant Name:</b>	Senthil Sengodan
<b>Customer Number:</b>	22907
<b>Filer:</b>	Robert H. Resis/Alma Bahena
<b>Filer Authorized By:</b>	Robert H. Resis
<b>Attorney Docket Number:</b>	005288.00014
<b>Receipt Date:</b>	18-SEP-2008
<b>Filing Date:</b>	18-DEC-2001
<b>Time Stamp:</b>	16:38:11
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 1740
RAM confirmation Number	2067
Deposit Account	190733
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

## File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	IssueFee14.PDF	111525 e9fac177ee44dfd3bbb81270be3be0cce7a bbc4e	no	1

## Warnings:

## Information:

2	Fee Worksheet (PTO-06)	fee-info.pdf	32148 5a02ace5624e3fc664738c65c334aa47333d 5f25	no	2
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## Warnings:

## Information:

Total Files Size (in bytes):			143673
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

### New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

### National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

### New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



## UNITED STATES PATENT AND TRADEMARK OFFICE

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 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,398	10/28/2008	7443859	005288.00014	8170

22907 7590 10/08/2008  
 BANNER & WITCOFF, LTD.  
 1100 13th STREET, N.W.  
 SUITE 1200  
 WASHINGTON, DC 20005-4051

**ISSUE NOTIFICATION**

The projected patent number and issue date are specified above.

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**  
 (application filed on or after May 29, 2000)

The Patent Term Adjustment is 994 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Senthil Sengodan, Burlington, MA;



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UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
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P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
10/017,398	7443859	2616	9200



**Correspondence Address/Fee Address Change**

The following fields have been set to Customer Number 72165 on 11/17/2010

- Correspondence Address
- Power of Attorney Address

The address of record for Customer Number 72165 is:

72165  
BANNER & WITCOFF, LTD  
ATTORNEYS FOR CLIENT 004770  
1100 13TH STREET  
SUITE 1200  
WASHINGTON, DC 20005-4051